Bharat Heavy Electricals Ltd.,
Electronics Division,
Mysore Road, Bangalore – 560 026

Tender Document for CCTV System for Yadadri 5X800MW

TENDER REFERENCE DOC	BSV0000046
TENDER DOCUMENT AVAILABLE FROM	16.09.2019 www.bhel.com & www. eprocure.gov.in
LAST DATE AND TIME FOR SUBMISSION OF TENDER	Refer E-Procurement System
DATE AND TIME FOR TENDER OPENING	Refer E-Procurement System
SUBMISSION OF TENDER	Bidder to submit offer in E-procurement website : https://bhel.abcprocure.com

This Tender Document Contains documents as per below index:

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Contact Person at BHEL:

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REQUEST FOR QUOTATION

BHARAT HEAVY ELECTRICALS LIMITED
Electronics Division
PB No. 2606, Mysore Road Bangalore - 560026
INDIA

RFQ NUMBER: BSV0000046
RFQ DATE: Refer E-Procurement System
RFQ DUE DATE: Refer E-Procurement System

(for all correspondence)
Purchase Executive : Nilmani Kumar
Phone :080- 26998663
Fax : 00918026989227
E-mail: savitha@bhel.in

Sl No.	Material Code	Description	Qty	Unit
1	PR0900000137	IP CCTV System - IP BASED CLOSE CIRCUIT TELEVISION INCLUDING ITEMS LIKE CAMERA, LENSESAND ACCESSORIES as per specification CE/416/CCTV/YTPS Rev00	1	Set
2	PR0880000180	Mandatory Spares CCTV system as per specification CE/416/CCTV/YTPS Rev00	1	Set

i). This is only RFQ not an order.
ii). In all correspondence quote RFQ No. & due date.
iii). Quotation should remain valid for a minimum peiod of 90 days from due date.

ಭಾರತ್ ಹೆವಿ ಎಲೆಕ್ಟ್ರಿಕಲ್ಸ್ ಲಿಮಿಟೆಡ್
भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Ltd.,
(A Government of India undertaking)
Electronics Division
PB 2606 , Mysore Road Bangalore , 560026 INDIA

CE: PR: 002- Rev 01

GENERAL COMMERCIAL CONDITIONS FOR CONTRACT

These 'General Commercial Conditions for Contract for Purchase' herein after referred to as GCC apply to all enquiries, tenders, requests for quotations, orders, contracts and agreements concerning the supply of goods and the rendering of related services (hereinafter referred to as "deliveries") to Bharat Heavy Electricals Limited and any of its units, regions or divisions (hereinafter referred to as "BHEL" or the Purchaser) or its projects/ customers.

Any deviations from or additions to these GCC require BHEL's express written consent. The general terms of business or sale of the vendor shall not apply to BHEL. Acceptance, receipt of shipments or services or effecting payment shall not mean that the general terms of business or sale of the vendor have been accepted.

Orders, agreements and amendments thereto shall be binding if made or confirmed by BHEL in writing. Only the Purchasing department of BHEL is authorized to issue the Purchase Order or any amendment thereof.

Definitions: Throughout these conditions and in the specifications, the following terms shall have the meanings assigned to them, unless the subject matter or the context requires otherwise.

a) 'The Purchaser' means Bharat Heavy Electricals Limited, Electronics division, Mysore road, Bangalore 560 026, a Unit of Bharat Heavy Electricals Limited (A Govt. of India Undertaking) incorporated under the Companies Act having its registered office at BHEL House, Siri Fort, New Delhi-110049, India and shall be deemed to include its successors and assigns. It may also be referred to as BHEL.
b) 'The vendor' means the person, firm, company or organization on whom the Purchase Order is placed and shall be deemed to include the vendor's successors, representative heirs, executors and administrator as the case may be. It may also be referred to as Seller, Contractor or Supplier.
c) 'Contract' shall mean and include the Purchase Order incorporating various agreements, viz. tender/ RFQ, offer, letter of intent/acceptance/ award, the General Conditions of Contract and Special Conditions of Contract for Purchase, Specifications, Inspection/ Quality Plan, Schedule of Prices and Quantities, Drawings, if any enclosed or to be provided by BHEL or his authorized nominee and the samples or patterns if any to be provided under the provisions of the contract.
d) 'Parties to the Contract' shall mean the 'The Vendor' and the Purchaser as named in the main body of the Purchase Order.

Order of Precedence:

In case of any inconsistency or contradiction between any of the documents, the order of precedence shall be Purchase Order, LOI / LOA, Special Conditions of Contract and General Conditions of Contract for commercial conditions; and specific agreement on technical conditions, RFQ/offer and specification for Technical Conditions.

Interpretation:

In the contract, except where the context requires otherwise:

a) words indicating one gender include all genders;
b) words indicating the singular also include the plural and words indicating the plural also include the singular;

c) provisions including the word "agree", "agreed" or "agreement" require the agreement to be recorded in writing, and
d) "Written" or "in writing" means hand-written, type-written, printed or electronically made, and resulting in a permanent record.

Applicable Conditions:

1. Price Basis: All prices shall be firm until the purchase order is executed / completed in all respects. No price variations / escalation shall be permitted.

2. Ordering and confirmation of Order:Vendor shall send the order acceptance on their company letter head/ through e-mail within a week from the date of receipt of Purchase Order or such other period as specified/ agreed by BHEL. BHEL reserves the right to revoke the order placed if the order confirmation differs from the original order placed. The acceptance of goods/services/supplies by BHEL as well as payments made in this regard shall not imply acceptance of any deviations.
   The purchase order will be deemed to have been accepted if no communication to the contrary is received within one week (or the time limit as specified/agreed by BHEL) from the date of receipt of the purchase order.

3. Documentation:After receipt of Purchase Order, vendor should submit necessary documents(if & as applicable) like drawings specified, bill of materials, datasheets, catalogues, quality plan, test procedure, type test report , O & M Manuals and/or any other relevant documents as per Specification/Purchase Order, as and when required by BHEL/Customer.
   At any stage within the contract period, the vendor shall notify of any error, fault or other defect found in BHEL's documents /specifications or any other items for reference. If and to the extent that (taking account of cost and time) any vendor exercising due care would have discovered the error, fault or other defect when examining the documents/specifications before submitting the tender, the time for completion shall not be extended. However if errors, omissions, ambiguities, inconsistencies, inadequacies or other defects are found in the vendor's documents, they shall be corrected at his cost, notwithstanding any consent or approval.

4. Penalty:
   a. For delay in documentation: In the event of delay in submission of complete set of specified documents ((like drawings, bill of materials, datasheets, catalogues, quality plan etc. as called in tender specifications including soft copies wherever applicable) in required sets beyond two(02) weeks (or as agreed/indicated in the SCC/Purchase Order) from the date of receipt of Purchase Order(by email), penalty at 0.5% (half percent) per week or part thereof, limited to a maximum of 5% (five percent) of the basic material value of the Purchase Order will be applicable.

      Penalty for delayed documentation if applicable, shall be deducted at the time of first supply payment. If penalty is applicable for duration of less than a week, penalty @ 0.5% (half percent) of the basic material value will be deducted. GST as applicable will be recovered along with penalty amount.

   b. For delay in delivery: In the event of delay in agreed contractual delivery as per Purchase Order, penalty @ 0.5 % (half percent) per week or part thereof but limited to a max of 10% (ten percent) value of undelivered portion (basic material cost) will be applicable. Delivery will commence from the date of issue of Manufacturing clearance along with approved document. The date for which Inspection call is issued by vendor along with test certificates / test reports /Certificate of Conformance / calibration reports, as proof of completion of manufacturing will be treated as date of deemed delivery for penalty calculation. In the absence of furnishing such document indicated above as proof of completion of manufacturing along with inspection call, actual date of inspection will be considered as date of deemed delivery and BHEL will not be responsible for delay in actual date of inspection.

Penalty for delayed delivery if applicable, shall be deducted at the time of first supply payment. If penalty is applicable for duration of less than a week, penalty @ 0.5% (half percent) of the basic material value will be deducted. GST as applicable will be recovered along with penalty amount.

5. Contract variations (Increase or decrease in the scope of supply): BHEL may vary the contracted scope as per requirements at site. If vendor is of the opinion that the variation has an effect on the agreed price or delivery period, BHEL shall be informed of this immediately in writing along with technical details. Where unit rates are available in the Contract, the same shall be the basis for such additional work. Vendor shall not perform additional work before BHEL has issued written instructions/ amendment to the Purchase Order to that effect. The work which the vendor should have or could have anticipated in terms of delivering the service(s) and functionality (i.e.) as described in this agreement, or which is considered to be the result of an attributable error on the vendor's part, shall not be considered additional work.

6. Inspection: Prior written notice of at least 10 days shall be given along with internal test certificates/COC and applicable test certificates. Materials will be inspected by BHEL-EDN-QS/CQS or BHEL nominated Third Party Inspection Agency (TPIA) or BHEL authorized Inspection Agency or Customer / Consultant or jointly by BHEL & Customer / consultant. All tests have to be conducted as applicable in line with approved Quality plan or QA Checklist or Purchase specification and original reports shall be furnished to BHEL-EDN, Bangalore for verification/acceptance for issue of dispatch clearance.
   All costs related to inspections & re-inspections shall be borne by vendor. Whether the Contract provides for tests on the premises of the vendor or any of his Sub-contractor/s, vendor shall be responsible to provide such assistance, labour, materials, electricity, fuels, stores, apparatus, instruments as may be required and as may be reasonably demanded to carry out such tests efficiently. Cost of any type test or such other special tests shall be borne by BHEL only if specifically agreed to in the purchase order.

7. Transit Insurance: Transit insurance coverage between vendor's works and project site shall be to the account of BHEL, unless specifically agreed otherwise. However, vendor shall send intimation directly to insurance agency (as mentioned in dispatch instructions issued by BHEL) through fax/courier/e-mail, immediately on dispatch of goods for covering insurance. A copy of such intimation sent by vendor to insurance agency shall be given to BHEL along with dispatch documents. Dispatch documents will be treated as incomplete without such intimation copy. BHEL shall not be responsible for sending intimations to insurance agency on behalf of the vendor.

8. Mode of dispatch:
   Indigenous Scope: By road on Door Delivery Consignee Copy attached basis through your approved transporter (unless otherwise indicated in Dispatch Instructions), only on receipt of Despatch Clearance from BHEL.
   Imported Scope: By Air/Sea through BHEL approved Freight Forwarder/supplier approved Consolidator respectively as per agreed contractual terms, only on receipt of Dispatch Clearance from BHEL.

9. Changes in Statutory levies:
   If any rates of Tax are increased or decreased, a new Tax is introduced, an existing Tax is abolished, or any change in interpretation or application of any Tax occurs in the course of the execution of Contract, which was or will be assessed on the bidder in connection with performance of the Contract, an equitable adjustment of the Contract Price shall be made to fully take into account any such change by addition to the Contract Price or deduction there from, as the case may be. However, these adjustments would be restricted to direct transactions between BHEL and the bidder /agent of foreign bidder (if applicable). These adjustments shall not be applicable on procurement of raw materials, intermediary components etc. by the bidder /agent.

10. Availing duty/tax exemption benefits by bidder, wherever applicable: BHEL shall issue the required Certificate/s, as per relevant policies of the Govt. of India, to facilitate the bidders to avail any such benefits under the Contract. In case of failure of the bidders to receive the benefits partly or fully from the Govt. of India and/or in case of any delay in receipt of such benefits, BHEL shall neither be liable nor responsible in any manner whatsoever.

11. Taxes against sub-vendor dispatches: All taxes/levies, as applicable in respect of all components, equipments and material to be despatched directly from the sub-vendor's works to Site irrespective of the fact whether such taxes and levies are assessable and chargeable on Vendor or the BHEL, shall be to the vendor's account and no separate claim in this regard will be entertained by BHEL.

12. High Sea Sales (HSS): Customs clearance of the consignment landed on Indian Sea/Air ports will be done by BHEL based on the original HSS documents provided by vendors.
    Any delay in submission of complete/correct HSS documents to BHEL may incur demurrage charges. All demurrage charges on account of incomplete /incorrect HSS documents submission by vendor will be to vendor's account and all such charges will be recovered from any of the available vendor bills with BHEL.

13. Packaging and dispatch:The Seller shall package the goods safely and carefully and pack them suitably in all respects considering the peculiarity of the material for normal safe transport by Sea/ Air / Rail/ Road to its destination suitably protected against loss, damage, corrosion in transit and the effect of tropical salt laden atmosphere. The packages shall be provided with fixtures/ hooks and sling marks as may be required for easy and safe handling. If any consignment needs special handling instruction, the same shall be clearly marked with standard symbols / instructions. Hazardous material should be notified as such and their packing, transportation and other protection must conform to relevant regulations.
    The packing, shipping, storage and processing of the goods must comply with the prevailing legislation and regulations concerning safety, the environment and working conditions. Any Imported/Physical Exports items packed with raw/ solid wood packing material should be treated as per ISPM – 15 (fumigation) and accompanied by Phytosanitory/ Fumigation certificate. If safety information sheets (MSDS – Material Safety Data Sheet) exist for an item or the packaging, vendor must provide this information without fail along with the consignment.
    Each package must be marked with Consignee name, Purchase order number, Package number, Gross weight and net weight, dimensions (LxBxH) and Seller's name. Packing list of goods inside each package with PO item number and quantity must also be fixed securely outside the box to indicate the contents of each box. Total number of packages in the consignment must also be indicated in the packing list.
    Separate packing & identification of items should be as follows.
    1. Main Scope - All items must be tagged with part no. & item description.
    2. Commissioning accessories/spares - All items must be tagged with part no. & item description.
    3. Mandatory spares - All items must be tagged with part no. & item description.
    Nevertheless, vendor shall adhere to dispatch & packing instructions issued by BHEL at the time of dispatch.

14. Assignment of Rights & Obligations; Subcontracting: Vendor is not permitted to subcontract the delivery or any part thereof to third party or to assign the rights and obligations resulting from this agreement in whole or in part to third parties without prior written permission from BHEL. Any permission or approval given by the BHEL shall, however, not absolve the vendor of the responsibility of his obligations under the Contract.

15. Progress report: Vendor shall render such report as to the progress of work and in such form as may be called for by the concerned purchase officer from time to time. The submission and acceptance of such reports shall not prejudice the rights of BHEL in any manner.

16. Non-disclosure and Information Obligations: Vendor shall provide with all necessary information pertaining to the goods as it could be of importance to BHEL. Vendor shall not reveal any specified confidential information that may be divulged by BHEL to Vendor's employees not involved with the tender/ contract & its execution and delivery or to third parties, unless BHEL has agreed to this in writing beforehand. Vendor shall not be entitled to use the BHEL name in advertisements and other commercial publications without prior written permission from BHEL.

17. Cancellation /Termination of contract: BHEL shall have the right to completely or partially terminate the agreement by means of written notice to that effect. Termination of the Contract, for whatever reason, shall be without prejudice to the rights of the parties accrued under the Contract up to the time of termination.
    BHEL shall have the right to cancel/foreclose the Order/ Contract, wholly or in part, in case it is constrained to do so on account of any decline, diminution, curtailment or stoppage of the business.

18. Risk Purchase Clause: In case of failure of supplier, BHEL at its discretion may make purchase of the materials / services not supplied / rendered in time at the RISK & COST of the supplier. Under such situation, the supplier who fails to supply the goods in time shall be wholly liable to make good to BHEL any loss due to risk purchase.
    In case of items demanding services at site like erection and commissioning, vendor should send his servicemen/representatives within 7 days from the service call. In case a vendor fails to attend to the service call, BHEL at its discretion may also make arrangements to attend such service by other parties at the **RISK & COST** of the supplier. Under such situation the supplier who fails to attend the service shall be wholly liable to make good to BHEL any loss due to risk purchase/service including additional handling charges due to the change.

19. Shortages: In the event of shortage on receipt of goods and/or on opening of packages at site, all such shortages, caused by supplier's act or omission, shall be made good at free of cost within a reasonable time that BHEL may allow from such intimation.
    Transit Damages: In the event of receipt of goods in damaged condition or having found them so upon opening of packages at site, supplier shall make good of all such damages within a reasonable time from such intimation by BHEL. In case BHEL raises an insurance claim, the cost of material limited to insurance settled amount less handling charges will be reimbursed to supplier.

20. Remedial work: Notwithstanding any previous test or certification, BHEL may instruct the vendor to remove and replace materials/goods or remove and re-execute works/services which are not in accordance with the purchase order. Similarly BHEL may ask the vendor to supply materials or to execute any services which are urgently required for any safety reasons, whether arising out of or because of an accident, unforeseeable event or otherwise. In such an event, Vendor shall provide such services within a reasonable time as specified by BHEL.

21. Indemnity Clause: Vendor shall comply with all applicable safety regulations and take care for the safety of all persons involved. Vendor is fully responsible for the safety of its personnel or that of his subcontractor's men / property, during execution of the Purchase Order and related services. All statutory payments including PF, ESI or other related charges have to be borne by the vendor. Vendor is fully responsible for ensuring that all legal compliances are followed in course of such employment.

22. Product Information, Drawings and Documents: All specified drawings, technical documents or other technical information received by Vendor from BHEL or vice versa shall not, without the consent of the other party, be used for any other purpose than that for which they were provided. They may not, without the consent of the Disclosing party, otherwise be used or copied, reproduced, transmitted or communicated to third parties. All information and data contained in general product documentation, whether in electronic or any other form, are binding only to the extent that they are by reference expressly included in the contract.
    Vendor, as per agreed date/s but not later than the date of delivery, provide free of charge information and drawings which are necessary to permit and enable BHEL to erect, commission, operate and maintain the product. Such information and drawings shall be supplied in as many numbers of copies as may be agreed upon.
    All intellectual properties, including designs, drawings and product information etc. exchanged during the formation and execution of the Contract shall continue to be the property of the disclosing party.

23. Intellectual Property Rights, Licenses: If any Patent, design, Trade mark or any other intellectual property rights apply to the delivery (goods/related service) or accompanying documentation shall be the exclusive property of the Vendor and BHEL shall be entitled to the legal use thereof free of charge by means of a non-exclusive, worldwide, perpetual license. All intellectual property rights that arise during the execution of the Purchase Order/ contract for delivery by vendor and/or by its employees or third parties involved by the vendor for performance of the agreement shall belong to BHEL. Vendor shall perform everything necessary to obtain or establish the above mentioned rights. The Vendor guarantees that the delivery does not infringe on any of the intellectual property rights of third parties. The Vendor shall do everything necessary to obtain or establish the alternate acceptable arrangement pending resolution of any (alleged)

claims by third parties. The Vendor shall indemnify BHEL against any (alleged) claims by third parties in this regard and shall reimburse BHEL for any damages suffered as a result thereof.

24. Force Majeure: Notwithstanding anything contained in the purchase order or any other document relevant thereto, neither party shall be liable for any failure or delay in performance to the extent said failures or delays are caused by the "Act of God" and occurring without its fault or negligence, provided that, force majeure will apply only if the failure to perform could not be avoided by the exercise of due care and vendor doing everything reasonably possible to resume its performance.
A party affected by an event of force majeure which may include fire, tempest, floods, earthquake, riot, war, damage by aircraft etc., shall give the other party written notice, with full details as soon as possible and in any event not later than seven (7) calendar days of the occurrence of the cause relied upon. If force majeure applies, dates by which performance obligations are scheduled to be met will be extended for a period of time equal to the time lost due to any delay so caused.

    Notwithstanding above provisions, in an event of Force Majeure, BHEL reserves for itself the right to cancel the order/ contract, wholly or partly, in order to meet the overall project schedule and make alternative arrangements for completion of deliveries and other schedules.

25. Warranty:
Wherever required, and so provided in the specifications/ Purchaser Order, the Seller shall ensure that the goods supplied shall comply with the specifications laid down, for materials, workmanship and performance.
Unless otherwise specified in SCC, warranty period shall be applicable for a period of 24 months from the date of delivery of goods or 18 months from the date of commissioning of goods, whichever is earlier.
The warranty period as described above shall apply afresh to replaced, repaired or re-executed parts of a delivery. Unless otherwise specifically provided in the Purchase Order, Vendor's liability shall be co terminus with the expiration of the applicable warranty period.

26. Limitation of Liability: Vendor's liability towards this contract is limited to a maximum of 100% of the contract value and consequential damages are excluded. However the limits of liability will have no effect in cases of criminal negligence or wilful misconduct.
The total liability of Vendor for all claims arising out of or relating to the performance or breach of the Contract or use of any Products or Services or any order shall not exceed the total Contract price.

27. Liability during warranty: Vendor shall arrange replacement / repair of all the defective materials / services under its obligation during the warranty period. The rejected goods shall be taken away by vendor and replaced / repaired. In the event of the vendor's failure to comply, BHEL may take appropriate action including disposal of rejections and replenishment by any other sources at the cost and risk of the vendor.
In case, defects attributable to vendor are detected during Warranty period or where the commissioning call is issued within the warranty period, vendor shall be responsible for replacement/ repair of the goods as required by BHEL at vendor's cost even after expiry of warranty period.
Further if the equipment or any part thereof cannot be used by reason of such defect and/or making good of such defect, the warranty period of the equipment or such part, as the case may be, shall be extended by a period equal to the period during which the equipment or such part cannot be used by BHEL because of any of the aforesaid reasons. Upon correction of the defects in the facilities or any part thereof by repair/replacement, such repair/replacement shall have the warranty period for a period of twelve (12) months from the time such replacement/repair of the equipment or any part thereof has been completed.

28. Liability after warranty period: At the end of the warranty, the Vendor's liability ceases except for latent defects. For the purpose of this clause, latent defects shall be the defects inherently lying within the material or arising out of design deficiency which do not manifest themselves during the warranty Period, but later. The Contractor's liability for latent defects warranty for the equipment including spares shall be limited to a period of six months from the end of the warranty period of the respective equipment including spares or first time commissioning, whichever is later but not later than one (01) year from the date of expiry of warranty period.

29. Compliance with Laws: Vendor shall, in performing the contract, comply with all applicable laws. The vendor shall make all remittances, give all notices, pay all taxes, duties and fees, and obtain all permits, licences and approvals, as required by the laws in relation to the execution and completion of the contract and for remedying of any defects; and the Contractor shall indemnify and hold BHEL harmless against and from the consequences of any failure to do so.

30. Settlement of Disputes:Except as otherwise specifically provided in the Purchase Order, decision of BHEL shall be binding on the vendor with respect to all questions relating to the interpretation or meaning of the terms and conditions and instructions herein before mentioned and as to the completion of supplies/work/services, other questions, claim, right, matter or things whatsoever in any way arising out of or relating to the contract, instructions, orders or these conditions or otherwise concerning the supply or the execution or failure to execute the order, whether arising during the schedule of supply/work or after the completion or abandonment thereof. Any disputes or differences among the parties shall to the extent possible be settled amicably between the parties thereto, failing which the disputed issues shall be settled through arbitration. Vendor shall continue to perform the contract, pending settlement of dispute(s).

31. Arbitration Clause in case of Contract with vendors other than Public Sector Enterprise (PSE) or a Government Department:

    ARBITRATION & CONCILIATION

    The parties shall attempt to settle any disputes or difference arising out of the formation, breach, termination, validity or execution of the Contract; or, the respective rights and liabilities of the parties; or, in relation to interpretation of any provision of the Contract; or, in any manner touching upon the Contract, or in connection with this contract through friendly discussions. In case no amicable settlement can be reached between the parties through such discussions, in respect of any dispute; then, either Party may, by a notice in writing to the other Party refer such dispute or difference to the sole arbitration of an arbitrator appointed by Head of the BHEL–EDN. Such Sole Arbitrator appointed, shall conduct the arbitration in English language.
    The Arbitrator shall pass a reasoned award and the award of the Arbitration shall be final and binding upon the Parties.
    Subject as aforesaid, the provisions of Arbitration and Conciliation Act 1996 (India) or statutory modifications or re-enactments thereof and the rules made thereunder and for the time being in force shall apply to the arbitration proceedings under this clause. The seat of arbitration shall be Bangalore.
    The cost of arbitration shall be borne as decided by the Arbitrator upon him entering the reference.
    Subject to the Arbitration Clause as above, the Courts at Bangalore alone shall have exclusive jurisdiction over any matter arising out of or in connection with this Contract.
    Notwithstanding the existence or any dispute or differences and/or reference for the arbitration, the parties shall proceed with and continue without hindrance the performance of its obligations under this Contract with due diligence and efficiency in a professional manner except where the Contract has been terminated by either Party in terms of this Contract.

    Arbitration Clause in case of Contract with a Public Sector Enterprise (PSE) or a Government Department:

    In the event of any dispute or difference relating to the interpretation and application of the provisions of the Contract, such dispute or difference shall be referred by either party for Arbitration to the Sole Arbitrator in the Department of Public Enterprises to be nominated by the Secretary to the Government of India in-charge of the Department of Public Enterprises. The Arbitration and Conciliation Act, 1996 shall not be applicable to arbitration under this clause. The award of the Arbitrator shall be binding upon the parties to the dispute, provided, however, any Party aggrieved by such Award may make further reference for setting aside or revision of the Award to the Law Secretary, Department of Legal Affairs, Ministry of Law and Justice, Government of India. Upon such reference the dispute shall be decided by the Law Secretary or the Special Secretary or Additional Secretary when so authorized by the Law Secretary, whose decision shall bind the Parties hereto finally and conclusively. The Parties to the dispute will share equally the cost of arbitration as intimated by the Arbitrator.'

32. Applicable Laws and Jurisdiction of Courts: Prevailing Indian laws both substantive and procedural, including modifications thereto, shall govern the Contract. Subject to the conditions as aforesaid, the competent courts in Bangalore alone shall have jurisdiction to consider over any matters touching upon this contract.

33. General Terms: That any non-exercise, forbearance or omission of any of the powers conferred on BHEL and /or any of its authorities will not in any manner constitute waiver of the conditions hereto contained in these presents.
    That the headings used in this agreement are for convenience of reference only.
    That all notices etc., to be given under the Purchase order shall be in writing, type script or printed and if sent by registered post or by courier service to the address given in this document shall be deemed to have been served on the date when in the ordinary course, they would have been delivered to the addressee.

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भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Ltd.,
(A Government of India undertaking)
Electronics Division
PB 2606 , Mysore Road Bangalore , 560026 INDIA

CE:PR:001- Rev 02

INSTRUCTIONS TO BIDDERS

Bidder is requested to read the instructions carefully and submit their quotation taking into consideration of all the points:

A. GENERAL INSTRUCTIONS:

1. Any Purchase Order resulting from this enquiry shall be governed by the Instructions to Bidders (document reference: CE: PR: 001 – Rev 02), General Conditions of Contract (document reference: CE: PR: 002 - Rev 01) and Special Conditions of Contract, if any, of the enquiry.
2. Any deviations from or additions to the "General Conditions of Contract" or "Special Conditions of Contract" require BHEL's express written consent. The general terms of business or sale of the bidder shall not apply to this tender.
3. Regret letter (either through post or by mail or by EPS) indicating reasons for not quoting must be submitted without fail, in case of non-participation in this tender. Supplier shall be liable for removal as a registered vendor of BHEL when the supplier fails to quote against four consecutive tender enquiries for the same item or all enquiries in last two years for the same item, whichever is earlier.
4. Procurement directly from the manufacturers is preferred. However, if the OEM/ Principal insist on engaging the services of an agent, such agent shall not be allowed to represent more than one manufacturer/ supplier in the same tender. Moreover, either the agent could bid on behalf of the manufacturer/ supplier or the manufacturer/ supplier could bid directly but not both. Agent/Representative authorized by the OEM/Principal in turn cannot further sub authorize any other firm for submitting the offer or for placement of order.

   In case bids are received from the manufacturer/ supplier and his agent, bid received from the agent shall be ignored.
5. Consultant / firm (and any of its affiliates) shall not be eligible to participate in the tender/s for the related goods for the same project if they were engaged for consultancy services for the same project.
6. If an Indian representative/associate/liaison office quotes on behalf of a foreign based bidder, such representative shall furnish the following documents:
   a. Authorization letter to quote and negotiate on behalf of such foreign-based bidder.
   b. Undertaking from such foreign based bidder that such contract will be honored and executed according to agreed scope of supply and commercial terms and conditions.
   c. Undertaking shall be furnished by the Indian representative stating that the co-ordination and smooth execution of the contract and settlement of shortages/damages/replacement/repair of imported scope till the equipment is commissioned and handed over to customer will be the sole responsibility of the Indian representative/associates/agent/liaison office.
   d. Refer **Annexure I** on "Guidelines for Indian Agents".

7. In case of imported scope of supply, customs clearance & customs duty payment will be to BHEL account after the consignment is received at Indian Airport /Seaport.Bidders must provide all original documents required

for completing the customs clearance along with the shipment. Warehousing charges due to incomplete or missing documentation will be to supplier's account. All offers for imported scope of supply by air, must be made from any of the gateway ports (within the country) indicated **(Refer Annexure II).**

8. The offers of the bidders who are on the banned list and also the offers of the bidders, who engage the services of the banned firms, shall be rejected. The list of the banned firms is available on BHEL website: http://www.bhel.com/vender_registration/vender.php
9. Business dealings with bidders will be suspended if they are found to have indulged in any malpractices/misconduct which are contrary to business ethics like bribery, corruption, fraud, pilferage, cartel formation, submission of fake/false/forged documents, certificates, information to BHEL or if they tamper with tendering procedure affecting the ordering process or fail to execute a contract, or rejection of 3 consecutive supplies or if their firms / works are under strike/lockout for a long period.Bidder may refer "Guidelines for Suspension of Business Dealings with Suppliers/ Contractors" available on www.bhel.com for more details.
10. The bidder along with its associate/collaborators/sub-contractors/sub-vendors/consultants/service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website http://www.bhel.com and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to your notice.

11. For this procurement, Public procurement (Preference to Make in India), Order 2017 dated 15.06.2017 & 28.05.2018 and subsequent Orders issued by the respective Nodal Ministry shall be applicable even if issued after issue of this NIT but before finalization of contract/PO against this NIT.

Any bidder intending to avail the benefits shall submit the requisite documents as per the aforesaid order.

In the event of any Nodal Ministry prescribing higher or lower percentage of purchase preference and/or local content in respect of this procurement, same shall be applicable.

B. <u>GUIDELINES FOR PREPARATION OF OFFER:</u>

1. Quotation shall be submitted in Single Part Bid, Two Part Bid or Three Part Bid, as called for in the tender:

   - **SINGLE PART BID**: Technical and Commercial Bid with prices along with price summary & filled in BHEL Standard Commercial terms and conditions in a single sealed envelope.

   - **TWO PART BID**: Unpriced offer i.e. "Techno-commercial Bid" with filled in BHEL Standard Commercial terms and conditions in a sealed envelope **along with the copy of the "Price Bid"without the prices** should be enclosed in one cover and the cover must be super scribed **"Techno-commercial offer)** and Priced offer i.e. "Price Bid"containing price summary in a separate sealed envelope and must be super scribed **"Price Bid"**.Both these envelopes shall be enclosed in a single sealed envelope superscribed with enquiry number, due date of tender and any other details as called for in the tender document.

   - **THREE PART BID**: Pre-qualification Bid (Part-I), Techno Commercial Bid with filled in BHEL Standard Commercial terms and conditions (Part-II), and Price Bid (Part-III). All three envelopes shall be enclosed in a single sealed envelope superscribed with enquiry number, due date of tender and any other details as called for in the tender document.

   If any of the offers (Part I, Part II or Part III) are not submitted before the due date and time of submission (or) if any part of the offer is incomplete, the entire offer of the bidder is liable for rejection.

2. Supplier shall ensure to superscribe each envelope with RFQ number, RFQ Date, RFQ Due date and time, Item Description and Project clearly & boldly. Also mention on the envelope whether it is "Techno Commercial Bid" or "Price Bid" or "Pre-Qualification Bid". Please ensure complete address, department name and purchase executive name is mentioned on the envelope (before dropping in the tender box or handing over) so that the

tender is available in time for bid opening.

3. BHEL standard Commercial Terms and Conditions (duly filled, signed & stamped) must accompany Technical-Commercial offer without fail and should be submitted in original only.

   The above indicated submission of Offers in "sealed envelope/hard copy" as mentioned in points B.1-B.3 is applicable for tenders that are not floated through E-Procurement System (EPS).

4. Validity: Unless otherwise specified in SCC (special commercial conditions of contract), the offer will be valid for a period of 90 days from the date of part-I bid opening and in case of Negotiation/Counter-offer/Reverse Auction, price validity will apply afresh for a period of _60_ days from the date of according final price by bidder (or) upto original validity period, whichever is later.

5. Any of the terms and conditions not acceptable to supplier, shall be explicitly mentioned in the Techno-Commercial Bid. If no deviations are brought out in the offer it will be treated as if all terms and conditions of this enquiry are accepted by the supplier without deviation.
6. Deviation to this specification/item description, if any, shall be brought out clearly indicating "DEVIATION TO BHEL SPECIFICATION" without fail, as a part of Techno-Commercial Bid. If no deviations are brought out in the offer it will be treated as if the entire specification of this enquiry is accepted without deviation.
7. Suppliers shall submit one set of original catalogue, datasheets, bill of materials, dimensional drawings, mounting details and/or any other relevant documents called in purchase specification as part of Technical Bid.
8. "Price Bid" shall be complete in all respects containing price break-up of all components along with all applicable taxes and duties, freight charges (if applicable) etc. Once submitted no modification / addition / deletion will be allowed in the "Price Bid." Bidders are advised to thoroughly check the unit price, total price to avoid any discrepancy.
9. In addition, bidder shall also quote for erection & commissioning charges/erection supervision & commissioning charges (E&C service charges) if applicable, documentation charges, testing Charges (type & routine), training charges etc. as applicable along with corresponding tax. The price summary must indicate all the elements clearly.
10. For Physical Export projects or wherever services are rendered by foreign suppliers in India, bidders should indicate "lumpsum" Erection and Commissioning (or) Erection Supervision and Commissioning charges, as applicable (including To & Fro Fare, Boarding, Lodging, Local Conveyance etc.) for carrying out E&C activity and further handing over to customer. The quotation shall clearly indicate scope of work, likely duration of commissioning, pre-commissioning checklist (if any).
11. Wherever bidders require PAC (Project Authority Certificate)/applicable certificates for import of raw materials, components required for DECC,EPCG Power Projects, Export Projects or other similar projects wherein supplies are eligible for customs duty benefits, lists and quantities of such items and their values (CIF) has to be mentioned in the offer. Prices must be quoted taking into account of such benefits.
12. Prices should be indicated in both figures & words**.** Bid should be free from correction/overwriting, using corrective fluid, etc. Any interlineation, cutting, erasure or overwriting shall be valid only if they are attested under full signature(s) of person(s) signing the bid else bid shall be liable for rejection. Any typographical error, totalling mistakes, currency mistake, multiplication mistake, summing mistakes etc. observed in the price bids will be evaluated as per **Annexure III** "Guidelines for dealing with Discrepancy in Words & Figures – quoted in price bid" and BHEL decision will be final.
13. Documents submitted with the offer shall be signed and stamped in each page by authorized representative of the bidder. However, this requirement is not mandatory for offers uploaded through E-Procurement System (EPS).

C. <u>GUIDELINES FOR OFFER SUBMISSION:</u>

The under-mentioned clauses 1, 2&3 will not be applicable for EPS tenders.

1. Offers / Quotations must be dropped in tender box before 13.00 Hrs. on or before due date mentioned in RFQ.The offers are to be dropped in the proper slot of the Tender Box kept in our reception area with caption "CE, SC&PV, DEFENCE". Tenders are opened on 3 days in a week (Monday/Wednesday/Friday). Tender must be deposited in the slot corresponding to the day (Monday - Box no.4/Wednesday - Box no. 6 /Friday - Box no.8) while depositing the offer.

2. E-Mail/ Internet/EDI offers received in time shall be considered only when such offers are complete in all respects. In case of offers received through E-mail, please send the offer to the email ID specified in the SCC document of the tender.

3. Offers of Vendors who already have a valid Technical/Commercial MOU with BHEL-EDN for the items of the RFQ shall mention the relevant MOU reference no. and give only such other details not covered in the MOU.

4. In cases where tender documents are bulky, or due to some reasons tender documents are required to be submitted by hand or through posts/couriers, the offers are to be handed over either of the two purchase officers whose names are mentioned in the SCC document of tender RFQ.
5. Tenders will be opened on due date, time and venue as indicated in the RFQ in the presence of bidders at the venue indicated in the RFQ. For EPS tenders, e-mail notifications will be automatically generated and forwarded to registered e-mail ID/s of bidders during opening of tenders.
6. Bidder will be solely responsible:
   a. For submission of offers before due date and time. Offers submitted after due date and time will be treated as "Late offers" and will be rejected.

   b. For submission of offers in the correct compartment of the tender box based on the day of due date (Monday/Wednesday/Friday). Please check before dropping your offer in the correct tender box.

   c. For depositing offers in proper sealed condition in the tender box. If the bidder drops the tender in the wrong tender box (or) if the tender document is handed over to the wrong person, BHEL will not be responsible for any such delays.

   d. For offers received through email etc., suppliers are fully responsible for lack of secrecy on information and ensuring timely receipt of such offers in the tender box before due date & time (This clause will not be applicable for EPS tenders).

   The above indicated submission of Offers as mentioned in points 6.a-6.d is applicable for tenders that are not floated through EPS.

   e. In case of e-tender, all required documents should be uploaded before due date and time. Availability of power, internet connections, system/software requirements etc. will be the sole responsibility of the bidder. Wherever assistance is needed for submission of e-tenders, help-line numbers as available in the web-site of service provider of BHEL may be contacted.

   Purchase Executive/ BHEL shall not be responsible for any of the activities relating to submission of offer.

D. PROCESSING OF OFFERS RECEIVED:

1. Any discount/ revised offer submitted by the supplier on its own shall be accepted provided it is received on or before the due date and time of offer submission (i.e. Part-I bid). The discount shall be applied on pro-rata basis to all items unless specified otherwise by the bidder.
2. Changes in offers or Revised offers given after Part-I bid opening shall not be considered as a part of the original offer unless such changes/revisions are requested by BHEL. In case of withdrawal of any Technical/Commercial deviation(s) by the bidder before opening of price bids/conducting the Reverse Auction, revision of price/impact bid will not be accepted.
3. In case there is no change in the technical scope and/ or specifications and/ or commercial terms & conditions, the supplier will not be allowed to change any of their bids after Technical bids are opened (after the due date and time of tender opening).
4. In case of changes in scope and/ or technical specifications and/ or commercial terms & conditions by BHEL and it accounts for price implications from bidders, all techno-commercially acceptable bidders shall be asked by BHEL (after freezing the scope, technical specifications and commercial terms & conditions) to submit the impact of such changes on their price bid. Impact price will be applicable only for changes in technical specification / commercial conditions by BHEL. The impact price must be submitted on or before the cut-off date specified by BHEL and the original price bid and the price impact bid will be opened together at the time of price bid opening.
5. BHEL reserves the right to adopt Reverse Auction or standard Price Bid Opening procedure for price evaluation, at its discretion. This shall be decided after completion of techno-commercial evaluation of tender (Refer BHEL website http://www.bhel.com/vender_registration/vender.php for Guidelines of Reverse Auction). In case BHEL does not resort to Reverse Auction, the price bids and price impacts (if any) already submitted and available with BHEL shall be opened as per BHEL's standard practice.
6. Un-opened bids (including price bids) will be returned to the respective bidders after release of Purchase order. Regarding Offers for EPS tenders that get rejected on PQC/ techno-commercial grounds, the bids for the subsequent parts will not be opened i.e., both technical bid and price bid (Parts-II & III)will not be opened in case of rejection on PQC ground and price bid (Part-II/Part-III, as applicable) will not be opened in case of rejection on techno-commercial ground.
7. After receipt of Purchase Order, supplier should submit required documents viz.,specified drawings, bill of materials, datasheets, catalogues, quality plan, test procedure, type test report , O & M Manuals and/or any other relevant documents as per Specification/Purchase Order, as and when required by BHEL/Customer.
8. Any deviation to the terms and conditions not mentioned in the quotation by supplier in response to this enquiry will not be considered, if put forth subsequently or after issue of Purchase Order, unless clarification is sought for by BHEL and agreed upon in the Purchase Order.
9. Evaluation shall be on the basis of delivered cost (i.e. “Total Cost to BHEL").

   “Total Cost to BHEL” shall include total basic cost, packing & forwarding charges, taxes and/or duties(as applicable), freight charges, taxes on Services, customs clearance charges for imported items, any other cost indicated by bidder for execution of the contract and loading factors (for non-compliance to BHEL Standard Commercial Terms & Conditions). Benefits arising out of Nil Import Duty on DEEC, EPCG, DFIA Projects, Physical Exports or such 100% exemptions (statutory benefits), project imports, customer reimbursements of statutory duties (like Basic Customs Duty and cess on customs duty), Input tax credits as applicable will also

be taken into account for arriving at the Total cost to BHEL (wherever applicable and as indicated in SCC document of tender).

For EPS tenders, it shall be noted that the prices (including discounts) vis-a-vis currency quoted in EPS portal only will be considered as Final for the purpose of evaluation of the lowest bidder. Bidder shall ensure to indicate the applicable taxes against each line item in online portal, failing to which the same will be considered as inclusive/NIL.

10. For evaluation of offers in foreign currency, the exchange rate (TT selling rate of SBI) shall be taken as under:

    Single part bids: Date of tender opening

    Two/three part bids: Date of Part-I bid opening

    Reverse Auction: Date of Part-I bid opening

    In case of Performance Bank Guarantee (PBG) also, exchange rate will be considered as mentioned above for converting foreign currency to Indian currency and vice versa.

    If the relevant day happens to be a bank holiday, then the exchange rate as on the previous working day of the bank (SBI) shall be taken.

11. Ranking (L-1, L-2 etc.) shall be done only for the techno-commercially acceptable offers.

E. <u>INFORMATION ON PAYMENT TERMS:</u>

1. All payments will be through Electronic Fund transfer (EFT). Vendor has to furnish necessary details as per BHEL standard format **(Refer Annexure IV)** for receiving all payments through NEFT.(Applicable for Indian vendors only).
2. In case of High Sea Sales transaction, customs clearance of the consignment landed on Indian Sea/Air ports will be done by BHEL based on the original HSS documents provided by vendors. All warehousing charges due to delay in submission of complete and or correct HSS documents to BHEL will be to supplier's account only. Such recovery will be made out of any of the available bills **(Refer Annexure V)**.
3. Statutory deductions, if any, will be made and the deduction certificate shall be issued.
   A. In case vendor does not provide PAN details, the TDS deduction shall be at the maximum percentage stipulated as per the provisions of Income Tax Act.

      In addition to the above, Foreign vendors shall also submit relevant details of their bankers like Swift Code, Banker's Name &Address etc.

   B. TDS deduction as per section 51 of CGST Act,2017 shall be applicable as per Gazette Notification No. 50/2018-Central Tax, Dated: 13th September 2018 and subsequent notification/s, as and when released by Govt. authorities.
4. Incomplete documentation will not be accepted. Delayed submission of invoice / documents may result in corresponding delay in payment. In this connection, request to also refer clause: G about invoicing & payment formalities under GST regime. Applicable documents shall be submitted to the purchaser at the time of execution of supplies/services for availing GST input credits.

F. STANDARD PAYMENT TERMS OF BHEL-EDN:

PURCHASE ORDERS FOR:	SUPPLY WITH ERECTION & COMMISSIONING	SUPPLY WITH ERECTION SUPERVISION & COMMISSIONING	SUPPLY ONLY
INDIGENOUS PROCUREMENT	a. 90% of basic value + 100% of taxes and freight charges will be paid in 45 days from the date of dispatch or 15 days from the date of submission of complete set of documentation, whichever is later. Balance 10% of basic value (Retention money) will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of E&C. Note: In case PBG is not furnished, only 80% payment will be released against 90% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice & Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.	b. 95% of the basic value + 100% of taxes and freight charges will be paid in 45 days from the date of dispatch or 15 days from the date of submission of complete set of documentation, whichever is later. Balance 5% of basic value (Retention money) will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of commissioning. Note: In case PBG is not furnished, only 85% payment will be released against 95% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice & Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.	c. 100% of PO value with taxes and freight will be paid in 45 days from the date of dispatch or 15 days from the date of submission of complete set of documentation, whichever is later.
IMPORT PROCUREMENT	d. 90% of the basic value will be paid on the 45th day, against usance draft of 45 days, from the date of AWB/BOL on submission of complete set of documents. Balance 10% of basic value (Retention money) will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of E&C. Note: In case PBG is not furnished, only 80% payment will be released against 90% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice & Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.	e. 95% of the basic value will be paid on the 45th day, against usance draft of 45 days, from the date of AWB/BOL on submission of complete set of documents. Balance 5% of basic value (Retention money) will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of commissioning. Note: In case PBG is not furnished, only 85% payment will be released against 95% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice & Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.	f. 100% of PO value will be paid against usance draft of 45 days from the date of AWB/BOL on submission of complete set of documents.

PURCHASE ORDERS FOR:	SUPPLY WITH ERECTION & COMMISSIONING	SUPPLY WITH ERECTION SUPERVISION & COMMISSIONING	SUPPLY ONLY
HIGH-SEA SALES PROCUREMENT	g. 90% of basic value will be paid in 45 days from the date of signing of High Sea Sale agreement or 15 days from the date of submission of complete set of documentation, whichever is later. Balance 10% of basic value (Retention money) will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of E&C. Note: In case PBG is not furnished, only 80% payment will be released against 90% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice & Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.	h. 95% of the basic value will be paid in 45 days from the date of signing of High Sea Sale agreement or 15 days from the date of submission of complete set of documentation, whichever is later. Balance 5% of basic value (Retention money) will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of commissioning. Note: In case PBG is not furnished, only 85% payment will be released against 95% claim without the consent of Vendor. This 10% basic amount withheld towards PBG will be paid either against submission of supplementary invoice & Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.	i. 100% of basic value will be paid in 45 days from the date of signing of High Sea Sale agreement or 15 days from the date of submission of complete set of documentation, whichever is later.

j. Comprehensive Annual Maintenance Contract:

Evaluation methodology: Unless and otherwise specified in SCC, CAMC will be applicable for a period of 04 years from the date of expiry of warranty period (or) from the date of completion of commissioning of equipment, whichever is later and the total CAMC value should not be less than 20% of the main supply value. In case the quoted total CAMC value is less than 20% of the main supply value, BHEL shall evaluate Bidders Price deducting differential amount from main supply price and apportioning towards CAMC charges.

Payment terms: 100% CAMC charges along with tax as applicable, will be paid in 15 days from the date of submission of supplementary invoice/documents against proof of completion of CAMC on yearly basis.

k. **Terms of Payment for Training:** 100% payment will be made in 45 days from the date of completion of Training or 15 days from the date of submission of complete set of invoice along with documentary evidence, whichever is later.

LOADING FACTORS FOR DEVIATION IN PAYMENT TERMS (APPLICABLE FOR IMPORT PROCUREMENT ONLY):

1) For offers received with Sight draft payment term in place of Usance draft, loading applicable will be 1.0% of basic value.

2) For offers received with Letter of Credit payment term with Usance of 45 days, loading applicable will be 2.5% of basic value.
   Additional loading of 2% will be applicable for payment term as Letter of Credit at Sight.

l. Any payment term with credit period of less than 45 days for indigenous supply/HSS and any other variation of payment terms are liable for rejection.

m. Standard payment terms indicated in Clauses: F (a), (b), (c), (d), (e), (f), (g), (h), (i), (j) & (k) will not attract any loading.

Note 1: Basic value of Purchase Order mentioned above will include all components of the purchase order and will exclude only taxes, duties, freight, training charges, E&C and AMC charges (wherever applicable). Wherever the Purchase Order is split into import portion and indigenous portion of supply, the retention money will be 10% (where scope includes E&C) or 05% (where scope includes Erection supervision & Commissioning) of both purchase order values put together.

Note 2: If the E&C could not be completed till the end of the Warranty period due to reasons not attributable to the supplier, BHEL will release the retention money to the supplier against Bank Guarantee for equivalent value valid for an initial period of one year.

Note 3: In case of Physical Export projects or wherever services are rendered by foreign suppliers in India, E&C charges (if quoted separately/extra by bidder) will be paid in 15 days from the date of submission of supplementary invoice/ documents against proof of completion of E&C.

Note 4: In case of multiple packages/units in a power plant, payment of retention money/E&C charges will be processed on pro-rata basis.

Note 5: No deviation will be permitted from the duration of Guarantee/Warranty and/or Comprehensive Annual Maintenance Contract period specified in SCC.

G. Terms & Conditions to be complied under GST regime:

1. All invoices to contain BHEL-EDN (buyer) GSTIN number: 29AAACB4146P1ZB. However for CGST +SGST/UGST billing outside the state of Karnataka, invoice has to be generated with BHEL's Nodal Agency GSTIN number. Address of Nodal Agency along with GSTIN number will be provided by BHEL at the time of issuing dispatch clearance.

2. The Bidder shall mention Bidder's GSTIN number in all quotations and Invoices submitted.

3. The Bidder shall also mention HSN (Harmonized System of Nomenclature) / SAC (Services Accounting Code) mandatorily in all quotations and invoices submitted.

4. Invoice submitted should be in the format as specified under GST Laws viz., all details as mentioned in Invoice Rules like GST registration number(GSTIN), invoice number with date of issue, quantity, rate, value, taxes with nomenclature – CGST, SGST, UGST,IGST mentioned separately, HSN Code / SAC Code etc. Invoice should be submitted in original for buyer plus duplicate for credit availment.

5. Payment of GST to Vendor will be made only if it is matching with data uploaded by the Vendor in GST portal.

6. For invoices paid on Reverse charge basis – "Tax payable on reverse charge basis" to be mentioned on the invoice.

7. In case GST credit is delayed/denied to BHEL due to non/delayed receipt of goods and/or tax invoice or expiry of timeline prescribed in GST law for availing such ITC, or any other reasons not attributable to BHEL, GST amount will be recoverable from vendor along with interest levied/ leviable on BHEL.

8. In case vendor delays declaring such invoice in his return and GST credit availed by BHEL is denied or reversed subsequently as per GST law, GST amount paid by BHEL towards such ITC reversal as per GST law will be recoverable from vendor/contractor along with interest levied/ leviable on BHEL.

9. Vendor should intimate BHEL immediately on the same date of invoicing without any delay.

10. In case of discrepancy in the data uploaded by supplier in the GSTN portal or in case of any shortages or rejection in the supply, then BHEL will not be able to avail the tax credit and will notify the supplier of the same. Supplier has to rectify the data discrepancy in the GSTN portal or issue credit note (details to be uploaded in GSTN portal) for the shortages or rejections in the supplies, within the calendar month notified by BHEL.

11. Bidders to note that Rules & Regulations pertaining to E-way bill system are to be strictly adhered to, as and when notified by Govt. authorities.

H. <u>Performance bank guarantee (PBG):</u>

Performance bank guarantee (PBG) will be applicable as called in the tender documents. Unless otherwise specified in the SCC, the PBG against performance of the contract shall be valid for a period of 24 months from the date of dispatch of goods + claim period of 03 months, for a value equal to 10 % of the basic value of the purchase order which will include all components of the purchase order and will exclude only taxes, duties, freight, training charges, E&C and AMC charges (wherever applicable).

1. The BG issued in Indian Rupees by Banks in India is to be executed on Non-Judicial Stamp paper/e-stamp paper of appropriate value as per Stamp Act prevailing in the State(s) where the BG is submitted or is to be acted upon or the rate prevailing in the State where the BG was executed, whichever is higher. The Stamp Paper/e-stamp paper shall be purchased in the name of Vendor/Bank issuing the guarantee.
2. No deviation for the duration and value of PBG will be permitted.
3. PBG shall be from any of the BHEL consortium of bankers **(refer Annexure VI)**.
4. PBGs from nationalized banks are also acceptable.
5. PBG should be sent directly by the bank to the dealing executive mentioned in the purchase order located at the address mentioned in the purchase order.
6. PBG should be in the format specified **(refer Annexure VII)**. No deviation to this format will be allowed. However in case BHEL changes the PBG format, bidder shall honor the same.
7. Bank Guarantee should be enforceable in Bangalore.
8. In Case of Bank Guarantees submitted by Foreign Vendors-

   a. From Nationalized/Public Sector / Private Sector/ Foreign Banks (BG issued by Branches in India) can be accepted subject to the condition that the Bank Guarantee should be enforceable in Bangalore.

   b. From Foreign Banks (wherein Foreign Vendors intend to provide BG from local branch of the Vendor country's Bank)

   b.1 Please note that Bank Guarantee issued by any of the Consortium Banks only will be accepted by BHEL. As such, Foreign Vendor needs to make necessary arrangements for issuance of Counter-Guarantee by Foreign Bank in favour of the Indian Bank's (BHEL's Consortium Bank) branch in India. It shall be noted that all charges for issuance of Bank Guarantee/ counter- Guarantee should be borne by the Foreign Vendor.

b.2 In case, Foreign Vendors intend to provide BG from Overseas Branch of our Consortium Bank (e.g. if a BG is to be issued by SBI Frankfurt), the same is acceptable. However, the procedure at sl.no. b.1 is required to be followed.

b.3 The BG issued may preferably be subject to Uniform Rules for Demand Guarantees (URDG) 758 (as amended from time to time).

9. Expired BGs / PBGs will be returned only after expiry of the claim period or on completion of the contractual obligation with respect to Purchase Order.
10. PBG shall not be applicable for spares.

I. PROVISONS APPLICABLE FOR MSE VENDORS (MICRO AND SMALL ENTERPRISES) :

Benefits/facilities as applicable for Micro and Small Enterprises (MSEs) shall be available to MSEs registered with Government designated authorities as per the Purchase & Price Preference Policy of the Government subject to them becoming eligible otherwise.

Vendors who qualify as MSE vendors are requested to submit applicable certificates (as specified by the Ministry of Micro, Small and Medium Enterprises) at the time of vendor registration. Vendors have to submit any of the following documents along with the tender documents in the Part-I bid to avail the applicable benefits:

a. Attested copy of valid NSIC certificate or

b. Attested copy of either Entrepreneur's Memorandum part II (EM II) certificate/Udyog Aadhar certificate having deemed validity (five years from the date of issue of acknowledgement in EM II/Udyog Aadhar) or

c. EM II/ Udyog Aadhaar certificate along with attested copy of a CA certificate (Format enclosed at Annexure VIII where deemed validity of EM II certificate/ Udyog Aadhar certificate of five years have expired) applicable for the relevant financial year (latest audited).

Date to be reckoned for determining the deemed validity will be the date of bid opening (Part-I in case of two-part bid and three-part bid).

Documents have to be notarized/attested by a Gazetted officer and must be valid as on the date of part I bid opening for the vendors to be eligible for the benefits applicable for MSE vendors. Please note that no benefit shall be applicable if any deficiency in the above required documents are not submitted before the price bid opening/Reverse Auction. If the tender is to be submitted through e-procurement portal, then the above required documents are to be uploaded on the portal.

Bidders to however note the documents that shall be furnished in order to establish credentials as MSE vendor should be as per the extant statutory requirements specified by the Ministry of Micro, Small and Medium Enterprises.

d. PURCHASE PREFERENCE FOR MSE VENDORS:

MSE vendors quoting within a price band of L1 + 15% shall be allowed to supply up to 25% of the requirement against this tender provided

1. The MSE vendor matches the L1 price.
2. L1 price is from a non MSE vendor.
3. L1 price will be offered to the vendor nearest to L1 in terms of price ranking (L2 - nearest to L1). In case of non-acceptance by the MSE vendor (L2), next ranking MSE vendor will be offered who is within the L1 + 15% band (if L3 is also within 15% band).
4. 3% of the 25% will be earmarked for women owned MSEs.
5. 25% of the 25% (i.e., 6.25% of the total enquired quantity) will be earmarked for SC/ST owned MSE firms provided conditions as mentioned in (1) & (2) are fulfilled.

6. In case where no SC/ST category firms are meeting the conditions mentioned in (1) and (2) or have not participated in the tender, the 6.25% of earmarked quantity for SC/ST owned MSE firms will be distributed among the other eligible MSE vendors who have participated in the tender.
7. In case after the bid opening it is seen that no MSE has become L1, then depending on the nature of the item, if it is not possible to split the tendered items/quantities on account of reasons like customer contract requirements of supplying one make for a given project or technical reasons like the tendered item being a system etc., then BHEL would not counter offer the L1 prices even though there may be MSE bidders within the +15% band of L1. Such information that tendered quantity will not be split shall be indicated in the SCC.

J. INTEGRITY COMMITMENT IN THE TENDER PROCESS, AND EXECUTION OF CONTRACTS:

1. Commitment by BHEL: BHEL commits to take all measures necessary to prevent corruption in connection with the Tender process and execution of the Contract. BHEL will, during the tender process, treat all bidder / suppliers in a transparent and fair manner, and with equity.

2. Commitment by Bidder(s)/ Contractor(s):

a. The Bidder(s)/ Contractor(s) commit(s) to take all measures to prevent corruption and will not directly or indirectly try to influence any decision or benefit which he is not legally entitled to.
b. The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any undisclosed agreement or understanding or any actions to restrict competition.
c. The Bidder(s)/ Contractor(s) will not commit any offence under the relevant Acts. The Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain or pass on to others, any information or document provided by BHEL as part of business relationship.
d. The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract and shall adhere to the relevant guidelines issued from time to time by Government of India/ BHEL.

If the Bidder(s) / Contractor(s), before award or during execution of the Contract commit(s) a transgression of the above or in any other manner such as to put his reliability or credibility in question, BHEL is entitled to disqualify the Bidder(s) / Contractor (s) from the tender process or terminate the contract and/ or take suitable action as deemed fit.

K. Integrity Pact (IP):

a) IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Contractors are handled in a fair, transparent and corruption free manner.
Following independent External Monitors (IEMs) on the present panel have been appointed by BHEL with the approval of CVC to oversee implementation of IP in BHEL.

1. Shri Arun Chandra Verma,IPS (Retd.)
Address: Flat No. C -1204, C Tower, Amrapali,Platinum Complex,Sector 119, Noida (U.P.)
Ph: +91 8130386387
Email: acverma1@gmail.com
2. Shri Virendra Bahadur Singh,IPS (Retd.)
Address: H. No. B-5/64, Vineet Khand, Gomti Nagar,Lucknow - 226010
Ph: +91 8853760730, 9818377360
Email: vbsinghips@gmail.com

The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two/three part bid). Only those Bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification.

b) Please refer Section-8 of the IP for Role and Responsibilities of IEMs (Annexure IX). In case of any complaint arising out of the tendering process, the matter may be referred to any of the above IEM(s). All correspondence with the IEMs shall be done through email only.

Note: No routine correspondence shall be addressed to the IEM (phone/ post/ email) regarding the clarifications, time extensions or any other administrative queries, etc. on the tender issued. All such clarification/ issues shall be addressed directly to the tender issuing (procurement) department's officials whose contact details are indicated in SCC document of tender.

Annexure

Annexure I

Guidelines for Indian Agents

- **Definition of Indian Agent**: An Indian Agent of foreign prinicipal is an individual, a partnership, an association of persons, a private or pubile company, that carries our specific obligation(s) towards processing of BHEL tender or finalization or execution of BHEL's contract on behalf of the foreign supplier.

In case of yes, vendor to note the following and reply accordingly:

i. BHEL shall deal directly with foreign vendors, wherever required, for procurement of goods. However, if the foreign principal desires to avail of the services of an Indian agent, then the foreign principal should ensure compliance to regulatory guidelines - which require mandatory submission of an Agency Agreement.

ii. It shall be incumbent on the Indian agent and the foreign principal to adhere to the relevant guidelines of Government of India, issued from time to time.

iii. The Agency Agreement should specify the precise relationship between the foreign OEM / foreign principal and their Indian agent and their mutual interest in the business. All services to be rendered by agent/ associate, whether of general nature or in relation to the particular contract, must be clearly stated by the foreign supplier/ Indian agent. Any payment, which the agent or associate receives in India or abroad from the OEM, whether as commission or as a general retainer fee should be brought on record in the Agreement and be made explicit in order to ensure compliance to laws of the country.

iv. Any agency commission to be paid by BHEL to the Indian agent shall be in Indian currency only.

v. Tax deduction at source is applicable to the agency commission paid to the Indian agent as per the prevailing rules.

vi. In the absence of any agency agreement, BHEL shall not deal with any Indian agent (authorized representatives / associate / consultant, or by whatever name called) and shall deal directly with the foreign principal only for all correspondence and business purposes.

vii. The "Guidelines for Indian Agents of Foreign Suppliers" enclosed at annexure –'A' shall apply in all such cases.

viii. The supply and execution of the Purchase Order (including indigenous supplies/ service) shall be in the scope of the OEM/ foreign principal. The OEM/ foreign principal should submit their offer inclusive of all indigenous supplies/ services and evaluation will be based on 'total cost to BHEL'. In case OEM/ foreign principal recommends placement of order(s) towards indigenous portion of supplies/ services on Indian supplier(s)/ agent on their behalf, the credentials/ capacity/ capability of the Indian supplier(s)/ agent to make the supplies/ services shall be checked by BHEL as per the extant guidelines of Supplier Evaluation, Approval & Review Procedure (SEARP), before opening of price bids. In this regard, details may be checked as per Annexure-B (copy enclosed). It will be the responsibility of the OEM/ foreign principal to get acquainted with the evaluation requirements of Indian supplier/ agent as per SEARP available on www.bhel.com.

The responsibility for successful execution of the contract (including indigenous supplies/ services) lies with the OEM/ foreign principal. All bank guarantees to this effect shall be in the scope of the OEM/ foreign principal.

---x---

Vendor's Signature with Seal

Annexure-A

Guidelines for Indian Agents of Foreign Suppliers

1.0 There shall be compulsory registration of agents for all Global (Open) Tender and Limited Tender. An agent who is not registered with BHEL shall apply for registration in the registration form in line with SEARP.

1.1 Registered agents will file an authenticated Photostat copy duly attested by a Notary Public/Original certificate of the Principal confirming the agency agreement and giving the status being enjoyed by the agent and the commission/ remuneration/ salary/ retainership being paid by the principal to the agent before the placement of order by BHEL.

1.2 Wherever the Indian representatives have communicated on behalf of their principals and the foreign parties have stated that they are not paying any commission to the Indian agents, and the Indian representative is working on the basis of salary or as retainer, a written declaration to this effect should be submitted by the party (i.e. Principal) before finalizing the order.

2.0 Disclosure of particulars of agents/ representatives in India, if any.

2.1 Tenderers of Foreign nationality shall furnish the following details in their offers:

2.1.1 The Bidder(s)/ Contractor(s) of foreign origin shall disclose the name and address of the agents/ representatives in India if any and the extent of authorization and authority given to commit the Principals. In case the agent/ representative be a foreign Company, it shall be confirmed whether it is existing Company and details of the same shall be furnished.

2.1.2 The amount of commission/ remuneration included in the quoted price(s) for such agents/ representatives in India.

2.1.3 Confirmation of the Tenderer that the commission/ remuneration, if any, payable to his agents/ representatives in India, may be paid by BHEL in Indian Rupees only.

2.2 Tenderers of Indian Nationality shall furnish the following details in their offers:

2.2.1 The Bidder(s)/ Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any, indicating their nationality as well as their status, i.e. whether manufacturer or agents of manufacturer holding the Letter of Authority of the Principal specifically authorizing the agent to make an offer in India in response to tender either directly or through the agents/ representatives.

2.2.2 The amount of commission/ remuneration included in the price (s) quoted by the Tenderer for himself.

2.2.3 Confirmation of the foreign principals of the Tenderer that the commission/ remuneration, if any, reserved for the Tenderer in the quoted price(s), may be paid by BHEL in India in equivalent Indian Rupees on satisfactory completion of the Project or supplies of Stores and Spares in case of operation items.

2.3 In either case, in the event of contract materializing, the terms of payment will provide for payment of the commission/ remuneration, if any payable to the agents/ representatives in India in Indian Rupees on expiry of 90 days after the discharge of the obligations under the contract.

2.4 Failure to furnish correct and detailed information as called for in paragraph 2.0 above will render the concerned tender liable to rejection or in the event of a contract materializing, the same liable to termination by BHEL. Besides this there would be a penalty of banning business dealings with BHEL or damage or payment of a named sum.

—x—

ANNEXURE - II
LIST OF INTERNATIONAL GATEWAY AIRPORTS

For air based consignment, terms of delivery will be on FCA basis from following listed airports only. Vendors are requested to verify this list for use before submission of offer.

SCHEDULE NO	COUNTRY	CURRENCY CODE	AIRPORT
D01	UK	GBP	LONDON (HEATHROW)
D02	UK	GBP	NEW CASTLE
D03	UK	GBP	OXFORD. CHETLAM
D04	UK	GBP	BRISTOL. WELLINGBOROUGH
D0S	UK	GBP	BIRMINGHAM
DO6	UK	GBP	EAST MIDLANDS
D07	UK	GBP	MANCHESTER
D08	UK	GBP	LEEDS
D09	UK	GBP	GLASGOW
D10	FRANCE	EURO	PARIS (ROISSY) & LYON
D11	SWEDEN	EURO	STOCKHOLM
D12	SWEDEN	EURO	GOTHENBERG & MALMO
D13	ITALY	EURO	ROMA, MILAN
D14	ITALY	EURO	TURIN, BOLOGNA, FLORENCE
D1S	NETHERLANDS	EURO	AMSTERDAM, ROTTERDAM
D16	AUSTRIA	EURO	VIENNA, LINZ, GRAZ
D17	BELGIUM	EURO	ANTWERP, BRUSSELS
D18	DENMARK	DKK	COPENHAGEN
D19	JAPAN	JPY	TOKYO, OSAKA
D20	SINGAPORE	SGD	SINGAPORE
D21	CANADA	CAD	TORONTO
D22	CANADA	CAD	MONTREAL
D23	USA	USD	NEW YORK, BOSTON
D24	USA	USD	CHICAGO
D2S	USA	USD	SAN FRANCISCO, LOS ANGELES
D26	USA	USD	ALANTA, HOUSTON
D27	GERMANY	EURO	MUNICH, KOLN, DUSSELDORF, HANNOVER, HAMBURG, STUTTGART, DAMSTADT, MANIHIEM, NURUMBERG
D28	GERMANY	EURO	FRANKFURT
D29	GERMANY	EURO	BERLIN
D30	SWITZERLAND	SFR	BASLE, ZURICH, GENEVA
D31	SPAIN	EURO	BARCELONA
D32	AUSTRALIA	AUD	SYDNEY
D33	AUSTRALIA	AUD	MELBOURNE
D34	AUSTRALIA	AUD	PERTH
D3S	CZECH	EURO	PRAGUE
D36	HONG KONG	HKD	HONG KONG
D37	NEW ZELAND	NZD	AUCKLAND
D38	RUSSIA	USD	MOSCOW
D39	SOUTH KOREA	USD	KIMPO INTERNATIONAL, INCHEON
D40	FINLAND	EURO	HELSINKI
D41	ROMANIA	EURO	BUCHAREST
D42	NORWAY	EURO	OSLO
D43	IRELAND	EURO	DUBLIN
D44	ISRAEL	USD	TEL AVIV
D45	UAE	USD	DUBAI
D46	OMAN	USD	MUSCAT
D47	EGYPT	USD	CAIRO
D48	TAIWAN	USD	TAIPEI
D49	UKRAINE	USD	KIEV
D50	CHINA	USD	SHANGHAI, SHENZHEN
D51	PHILIPINES	USD	MANILA
D52	MALAYSIA	USD	KUALALUMPUR, PE NANG
D53	CYPRUS	USD	LARNACA
D54	SOUTH AFRICA	USD	JOHANNESBERG, DURBAN
D55	SLOVAKIA	EURO	BARTISLOVA
D56	SAUDI ARABIA	SAR	RIYADH
D57	TURKEY	EURO	ISTANBUL
D58	THAILAND	USD	BANGKOK
D59	BRAZIL	USD	SAO PAULO, RIO DE JANEIRO

ANNEXURE – III

DISCREPANCY IN WORDS & FIGURES – QUOTED IN PRICE BID

Following guidelines will be followed in case of discrepancy in words & figures-quoted in price bid:

(a) If, in the price structure quoted for the required goods/services/works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless in the opinion of the purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly.

(b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

(c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

(d) If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date upto which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the purchaser, the bid is liable to be ignored.

ANNEXURE - IV

Electronic Funds Transfer (EFT) OR Paylink Direct Credit Form

Please Fill up the form in CAPITAL LETTERS only.
TYPE OF REQUEST(Tick one): _____ CREATE _____ CHANGE

BHEL Vendor / Supplier Code:
Company Name :
Permanent Account Number(PAN):
Address

City: PINCODE STATE

Contact Person(s)
Telephone No:
Fax No:
e-mail id:

1 Bank Name:
2 Bank Address:

3 Bank Telephone No:
4 Bank Account No:
5 Account Type: Savings/Cash Credit
6 9 Digit Code Number of Bank and branch appearing on MICR cheque issued by Bank
7 Bank IFSC Code(applicable for NEFT)
8 Bank IFSC code(applicable for RTGS) (Indian Financial System Code)

A I hereby certify that the particulars given above are true, correct and complete and that I, as a representative for the above named Company, hereby authorise BHEL, EDN, Bangalore to electronically deposit payments to the designated bank account.

B If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold BHEL / transfering Bank responsible.

C This authority remains in full force until BHEL, EDN,Bangalore receives written notification requesting a change or cancellation.

D I have read the contents of the covering letter and agree to discharge the responsibility expected of me as a participant under ECS / EFT.

Date:

Authorised Signatory:
Designation: Telephone No. with STD Code

Company Seal

Bank Certificate

We certify that_____has an Account No_____ with us and we confirm that the bank details given above are correct as per our records.

Date: (.....)
Place: Signature

Please return completed form **along with a blank cancelled cheque or photocopy** thereof to:
Bharath Heavy Electricals Ltd,
Attn:
Electronics Division, Mysore Road,
BANGALORE - 560 026
In case of any Querry, please call concerned purchase executive.

ANNEXURE - V

PRESENT PROCEDURE FOR SALE IN TRANSIT (HIGH SEA SALES)

In case of High Sea Sales, vendor should submit following documents:

1. **ORIGINAL HIGH SEA SALES AGREEMENT**
   - Sale agreement (on Rs. 200/- non-judicial stamp paper & notarised with 2 witnesses with identity) has to be signed between BHEL and the Party importing material. The date of the sale documents should be in between the date of House Air Way Bill / Bill of Lading and before landing of the goods in Indian origin.
   - Following shall be included in the High Sea Sales Agreement:
     "THE BUYER ALSO UNDERTAKE DISCHARGES, THE OBLIGATION AND FULFILLMENT OF CONDITIONS, IF ANY, ATTACHED TO THE IMPORTATION, ASSESSMENT AND CLEARANCE OF THE GOODS IN TERMS CUSTOMS TARIFF ACT 1975, THE CUSTOMS ACT 1962 & RULES & REGULATIONS MADE THERE UNDER AND OTHER RELEVANT ACTS, ORDERS, NOTIFICATIONS".

2. **ORIGINAL INVOICES: INDIGENOUS RUPEE INVOICE & FOREIGN CURRENCY INVOICE**
   - Prices should be C.I.F., designated airport/seaport basis.
   - I.E.C., C.S.T., K.S.T. Nos. to be mentioned.
   - Description of item (Nomenclature), Unit & Quantity in both the Foreign Currency & the Indigenous Invoice in Rupee shall be exactly as per Purchase Order Description of item, Quantity and Unit. The Indigenous Invoice value shall be exactly as per Purchase Order value.
   - Seller should give Foreign Currency Invoice from the original consignor. The Foreign Currency Invoice value should be at least 2% (two per cent) less than the Indigenous Rupee Invoice value in equivalent foreign currency.

4. **ORIGINAL HOUSE AIR WAY BILL/ BILL OF LADING**
   - The sale agents should duly endorse House Air Way Bill (HAWB) for air shipments or original Bill of Lading (O.B.L.) for sea shipments and Foreign Currency Invoice in favour of BHEL-EDN.

5. **ORIGINAL CARGO ARRIVAL NOTICE FROM FORWARDER.**

6. **ORIGINAL DELIVERY ORDER ISSUED IN NAME OF BHEL-EDN.**

7. **ORIGINAL PACKING LIST.**

8. **A LETTER TO THE COMMISSIONER OF CUSTOMS FOR EFFECTING ABOVE SALE.**

9. **A LETTER TO THE DEPUTY ASSESSOR (OCTROI) FOR EFFECTING ABOVE SALE IN FAVOUR OF BHEL.**

REMARKS: In case vendor needs any clarifications on the above, the same may be sought in writing.

Annexure-VI

BHEL MEMBER BANKS (LIST OF CONSORTIUM BANKS)

BANK GUARANTEE (BG) SHALL BE ISSUED FROM THE FOLLOWING BANKS ONLY:

	Nationalised Banks		**Nationalised Banks**
1	Allahabad Bank	19	Vijaya Bank
2	Andhra Bank		**Public Sector Banks**
3	Bank of Baroda	20	IDBI
4	Canara Bank		**Foreign Banks**
5	Corporation Bank	21	CITI Bank N.A
6	Central Bank	22	Deutsche Bank AG
7	Indian Bank	23	The Hongkong and Shanghai Banking Corporation Ltd. (HSBC)
8	Indian Overseas Bank	24	Standard Chartered Bank
9	Oriental Bank of Commerce	25	J P Morgan
10	Punjab National Bank		
11	Punjab & Sindh Bank		**Private Banks**
12	State Bank of India	26	Axis Bank
13	State Bank of Hyderabad	27	The Federal Bank Limited
14	Syndicate Bank	28	HDFC Bank
15	State Bank of Travancore	29	Kotak Mahindra Bank Ltd
16	UCO Bank	30	ICICI Bank
17	Union Bank of India	31	IndusInd Bank
18	United Bank of India	32	Yes Bank

Note:

- All BGs must be issued from BHEL consortium banks listed above.
- This list is subject to changes. Hence vendors are requested to check this list every time before issuing BGs.
- Bank Guarantees issued by Co-Operative Banks/Financial Institutions cannot to be accepted under any circumstance.

Annexure-VII

BANK GUARANTEE FOR PERFORMANCE SECURITY

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

In consideration of Bharat Heavy Electricals Limited (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Companies Act, 1956 and having its registered office at _____[1] through its Unit at.....(name of the Unit) having awarded to (Name of the Vendor / Contractor / Supplier) with its registered office at_____[2] hereinafter referred to as the ' Vendor / Contractor / Supplier ', which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref No.....dated .....[3] valued at Rs.....[4] (Rupees ----------)/FC.....(in words.....) for .....[5] (hereinafter called the 'Contract') and the Vendor / Contractor / Supplier having agreed to provide a Contract Performance Bank Guarantee, equivalent to .....% (.... Percent) of the said value of the Contract to the Employer for the faithful performance of the Contract,

we, ..., (hereinafter referred to as the Bank), having registered/Head office at ..... and inter alia a branch at ..... being the Guarantor under this Guarantee, hereby, irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer any sum or sums upto a maximum amount of Rs -- ---------- [6] (Rupees ----------) without any demur, immediately on first demand from the Employer and without any reservation, protest, and recourse and without the Employer needing to prove or demonstrate reasons for its such demand.

Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____.

We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Vendor / Contractor / Supplier in any suit or proceeding pending before any Court or Tribunal, Arbitrator or any other authority, our liability under this present being absolute and unequivocal.

The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment thereunder and the Vendor / Contractor / Supplier shall have no claim against us for making such payment.

We the .....bank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Contract/satisfactory completion of the performance guarantee period as per the terms of the Contract and that it shall continue to be enforceable till

all the dues of the Employer under or by virtue of the said Contract have been fully paid and its claims satisfied or discharged.

We .....BANK further agree with the Employer that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract or to extend time of performance by the said Vendor / Contractor / Supplier from time to time or to postpone for any time or from time to time any of the powers exercisable by the Employer against the said Vendor / Contractor / Supplier and to forbear or enforce any of the terms and conditions relating to the said Contract and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Vendor / Contractor / Supplier or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said Vendor / Contractor / Supplier or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Vendor / Contractor / Supplier and notwithstanding any security or other guarantee that the Employer may have in relation to the Vendor / Contractor / Supplier 's liabilities.

This Guarantee shall remain in force upto and including..... [7] and shall be extended from time to time for such period as may be desired by Employer.

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Vendor / Contractor / Supplier but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms thereof.

Unless a demand or claim under this guarantee is made on us in writing on or before the .....[8]we shall be discharged from all liabilities under this guarantee thereafter.

We, ... BANK lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.

Notwithstanding anything to the contrary contained hereinabove:

a) The liability of the Bank under this Guarantee shall not exceed..... [6]
b) This Guarantee shall be valid up to .....[7]
c) Unless the Bank is served a written claim or demand on or before _____[8] all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank.

We, _____ Bank, have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

For and on behalf of
(Name of the Bank)

Dated.....

Place of Issue.....

[1] *NAME AND ADDRESS OF EMPLOYER I.e Bharat Heavy Electricals Limited*

[2] *NAME AND ADDRESS OF THE VENDOR /CONTRACTOR / SUPPLIER.*

[3] *DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE*

[4] *CONTRACT VALUE*

[5] *PROJECT/SUPPLY DETAILS*

[6] *BG AMOUNT IN FIGURES AND WORDS*

[7] *VALIDITY DATE*

[8] *DATE OF EXPIRY OF CLAIM PERIOD*

Annexure – VIII
(Applicable only for MSE suppliers)
Certificate by Chartered Accountant on Letter Head

This is to certify that M/s ....(hereinafter referred to as `Company') having its registered office at ..... is registered under MSMED Act 2006, (Entrepreneur Memorandum No (Part-11 ..... dtd ....., Category: ..... (Micro/Small) (Copy enclosed).

Further verified from the Books of Accounts that the investment of the company as per the latest audited financial year..... as per MSMED Act 2006 is as follows:

1. **For Manufacturing Enterprises:** Investment in plant and machinery (i.e. original cost excluding land and building and the items specified by the Ministry of Small Scale Industries vide its notification No.S.O.1722 (E) dated October 5, 2006: **Rs**.....Lacs.

2. **For Service Enterprises:** Investment in equipment (original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006: **Rs.** .....Lacs.

The above investment of Rs. .....Lacs in within permissible limit of Rs.....Lacs for.....Micro / Small (Strike off which is not applicable) Category under MSMED Act 2006.

Or

The company has been graduated from its original category (Micro/ Small) (**Strike off which is not applicable**) and the date of graduation of such enterprise from its original category is ..... (dd/mm/yyyy) which is within the period of 3 years from the date of graduation of such enterprise from its original category as notified vide S.O. No. 3322(E) dated 01.11.2013 published in the gazette notification dated 04.11.2013 by Ministry of MSME.

Date:

(Signature)

Name:

Membership Number:

Seal of Chartered Accountant

Annexure-IX

INTEGRITY PACT

Between

Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at "BHEL House", Siri Fort, New Delhi - 110049 (India) hereinafter referred to as "The Principal", which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the ONE PART

and

_____, (description of the party along with address), hereinafter referred to as "The Bidder/ Contractor" which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the OTHER PART

Preamble

The Principal intends to award, under laid-down organizational procedures, contract/s for CCTV System for Yadadri - 5X800 MW Project. Tender No: BSV000046 Dt: 16.09.19 _____. The Principal values full compliance with all relevant laws of the land, rules and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal will appoint Independent External Monitor(s), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1- Commitments of the Principal

1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.

1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.

1.1.3 The Principal will exclude from the process all known prejudiced persons.

1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions:

Section 2 - Commitments of the Bidder(s)/ Contractor(s)

2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.

2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he/ she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

2.1.2 The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any illegal or undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant Indian Penal Code (IPC) and Prevention of Corruption Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

2.1.4 Foreign Bidder(s)/ Contractor(s) shall disclose the name and address of agents and representatives in India and Indian Bidder(s)/ Contractor(s) to disclose their foreign principals or associates. The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

2.2 The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

2.3 The Bidder(s)/ Contractor(s) shall not approach the Courts while representing the matters to IEMs and will await their decision in the matter.

Section 3 - Disqualification from tender process and exclusion from future contracts

If the Bidder(s)/ Contractor(s), before award or during execution has committed a transgression through a violation of Section 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process or take action as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors", framed by the Principal.

Section 4 - Compensation for Damages

4.1 If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent Earnest Money Deposit/ Bid Security.

4.2 If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to section 3, the Principal shall be entitled to

demand and recover from the Contractor liquidated damages equivalent to 5% of the contract value or the amount equivalent to Security Deposit/ Performance Bank Guarantee, whichever is higher.

Section 5 - Previous Transgression

5.1 The Bidder declares that no previous transgressions occurred in the last 3 years with any other company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.

5.2 If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section 6 - Equal treatment of all Bidders/ Contractors / Sub-contractors

6.1 The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors. In case of sub-contracting, the Principal contractor shall be responsible for the adoption of IP by his sub-contractors and shall continue to remain responsible for any default by his sub-contractors.

6.2 The Principal will disqualify from the tender process all bidders who do not sign this pact or violate its provisions.

Section 7 - Criminal Charges against violating Bidders/ Contractors /Subcontractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section 8 - Independent External Monitor(s)

8.1 The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

8.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.

8.3 The Bidder(s)/ Contractor(s) accepts that the Monitor has the right to access without restriction to all contract documentation of the Principal including that provided by the Bidder(s)/ Contractor(s). The Bidder(s)/ Contractor(s) will grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his contract documentation. The same is applicable to Sub-contractor(s). The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) / Sub-contractor(s) with confidentiality in line with Non- disclosure agreement.

8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.

8.5 The role of IEMs is advisory, would not be legally binding and it is restricted to resolving issues raised by an intending bidder regarding any aspect of the tender which allegedly restricts competition or bias towards some bidders. At the same time, it must be understood that IEMs are not consultants to the Management. Their role is independent in nature and the advice once tendered would not be subject to review at the request of the organization.

8.6 For ensuring the desired transparency and objectivity in dealing with the complaints arising out of any tendering process, the matter should be examined by the full panel of IEMs jointly as far as possible, who would look into the records, conduct an investigation, and submit their joint recommendations to the Management.

8.7 The IEMs would examine all complaints received by them and give their recommendations/ views to CMD, BHEL, at the earliest. They may also send their report directly to the CVO and the Commission, in case of suspicion of serious irregularities requiring legal/ administrative action. IEMs will tender their advice on the complaints within 10 days as far as possible.

8.8 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.

8.9 IEM should examine the process integrity, they are not expected to concern themselves with fixing of responsibility of officers. Complaints alleging mala fide on the part of any officer of the organization should be looked into by the CVO of the concerned organisation.

8.10 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant Indian Penal Code/ Prevention of Corruption Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.

8.11 The number of Independent External Monitor(s) shall be decided by the CMD, BHEL.

8.12 The word 'Monitor' would include both singular and plural.

Section 9 - Pact Duration

9.1 This Pact shall be operative from the date IP is signed by both the parties till the final completion of contract for successful bidder and for all other bidders 6 months after the contract has been awarded. Issues like warranty / guarantee etc. should be outside the purview of IEMs.

9.2 If any claim is made/ lodged during currency of IP, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/ determined by the CMD, BHEL.

Section 10 - Other Provisions

10.1 This agreement is subject to Indian Laws and jurisdiction shall be registered office of the Principal, i.e. New Delhi.

10.2 Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

10.3 If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

10.4 Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

10.5 Only those bidders / contractors who have entered into this agreement with the Principal would be competent to participate in the bidding. In other words, entering into this agreement would be a preliminary qualification.

For & On behalf of the Principal

ಬಿ. ಸವಿತಾ, ಉಪ-ಪ್ರಧಾನ ವ್ಯವಸ್ಥಾಪಕರು/ಸಿ.ಇ.-ಎಮ್‌ಎಮ್-ಪಿ.ಆರ್.
बी. सविता, उप महाप्रबंधक / सीई-एमएम-पीआर
B. SAVITHA, DY. GENERAL MANAGER / CE-MM-PR
BHEL-EDN, MYSORE ROAD, BANGALORE - 560 026

(Office Seal)

For & On behalf of the Bidder/ Contractor

(Office Seal)

Place Bangalore

Date 16.09.19

Witness: Nagendra R

(Name & Address) Nagendra R
BHEL - EDN, Bangalore - 560026

Witness:

(Name & Address)

ಭಾರತ್ ಹೆವಿ ಎಲೆಕ್ಟ್ರಿಕಲ್ಸ್ ಲಿಮಿಟೆಡ್
भारत हेवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Ltd.,
(A Government of India undertaking)
Electronics Division
PB 2606 , Mysore Road Bangalore , 560026 INDIA

CE: PR: 003- Rev 01

SPECIAL COMMERCIAL CONDITIONS OF CONTRACT

Reference is brought to BHEL's Instructions to Bidders (Document Ref: CE: PR: 001- Rev 02) and General Commercial Conditions for Contract (Document Ref: CE: PR: 002- Rev 01). These documents along with required annexures are available in our website: _____.These two documents along with Special Conditions of Contract annexed to this RFQ will form an integral part of the contract as and when the RFQ culminates into a Purchase Order / Contract.

RFQ No: BSV**0000046** **RFQ Date: As per E-Procurement System**
Due Date: As per E-Procurement System **Customer/Project: Yadadri 5X800MW**

Item Description: CCTV System

E-tendering – Applicable

TYPE OF BID~~:~~ Two Part Bid

Purchase Executives: Clarifications with regard to the tender shall be addressed to purchase officers whose e-mail IDs are given below: **savitha@bhel.in** or **nagendrar@bhel.in**

Submission of documents post PO viz., drawings /data sheet etc. as indicated in Cl: 04 of GCC: Within **__2__** weeks from the date of receipt of Purchase Order. Delay in submission of complete set of specified documents in NIT, will attract Penalty as per GCC Clause no.:04.a.

Splitting of tendered quantity to MSE vendors: The tendered quantity ~~will~~ /will not be split to MSE vendor~~/s subject to submission of relevant documents by vendors. Refer clause I of Instructions to Bidders for conditions applicable and for information on documents to be submitted.~~

Destination: a) For Indigenous scope of supply, items are to be directly despatched to BHEL's/customer's project Site Office or Stores located at/**near 5x800MW Yadadri Thermal Power project, Veerlapalem Village, Damercherla Mandal, Nalgonda District - 508207, Telangana** Consignee other details required for dispatch will be issued by BHEL along with Despatch Clearance.

b) For Imported scope of supply and high sea sale, destination is **_Bangalore_**. In case of shipment by sea, port of discharge will be any port in India seaport and port of delivery shall be ICD-Bangalore.

Project Benefits:

Imported scope of supply: Merit Duty is applicable

Terms of Delivery:

- **Indigenous scope of supply:**

  Ex-works <_____(station of dispatch)> (including Packing & Forwarding charges but excluding Taxes & Duties).

- **Imported scope of supply:**

  F.C.A. (for air consignments) <_____(indicate international port of dispatch)>/ C.I.F. (for sea consignments) <__ICD,Bangalore__> (including Packing, Forwarding, Handling, Ancillary charges like processing of Sight Draft/ Letter of Credit, negotiation of bank documents, Export declaration, Country of Origin etc.).

  Kindly indicate the approximate weight of the total imported consignment, which is required for calculating air-freight charges: _____

  Under-mentioned details shall be provided against indigenous supplies and services:

  a. GSTIN (no.) of place of supply: _____

b. HSN (Harmonized System of Nomenclature) code: _____
Applicable tax and Rate: _____&_____

c. SAC (Service Accounting Code) no.:_____
Applicable tax and Rate: _____&_____

d. If service is also involved, GSTIN (no.) of place of supply of service: _____

I. Bidders to mandatorily provide confirmation/compliance for the under-mentioned terms:

SL NO.	TERMS	BHEL ACCEPTABLE TERM	BIDDER'S CONFIRMATION	REMARKS,if any
01	**Reverse Auction**	Will be intimated separately to qualified bidders after finalization of techno-commercial evaluation. Non-acceptance to participate in RA may result in non-consideration of the bid, in case BHEL decides to go for RA. In case BHEL does not resort to Reverse Auction, the price bids and price impacts (if any) shall be opened as per BHEL's standard practice.	**AGREE**	
02	**Delivery Period**	Within __**08**____ weeks from the date of issue of Manufacturing clearance along with approved document. Manufacturing clearance will be issued strictly as per project requirement. Delay in contractual delivery will attract Penalty as per GCC Clause no.:04.b.	**AGREE** …… weeks	
03	**Terms of Payment**	Refer Clause "**F**" of Instructions to Bidder for BHEL standard Payment terms and loading factors applicable for non-compliance against payment terms: **Indigenous Scope:** ~~a)Supply with Erection & Commissioning~~ b)Supply with Erection Supervision & Commissioning (For Main supply) c) Supply only (For spares) **Imported Scope:** ~~d)Supply with Erection & Commissioning~~ e)Supply with Erection Supervision & Commissioning(For Main supply) f) Supply only(For spares) **High-Sea sales:** ~~g)Supply with Erection & Commissioning~~ h) Supply with Erection Supervision & Commissioning(For Main supply) i) Supply only(For spares) Spares: c) and/or f)/i) depending upon the scope	**AGREE**	

<u>II. Bidder to note that Deviations shall not be permitted for the below mentioned terms and are deemed to be complied. In case of non-compliance/deviation, offer shall be liable for rejection:</u>

(1) **Validity:** The offer will be valid for a period of _**90**_ days from the date of part-I bid opening and in case of Negotiation/ Counter-offer/Reverse Auction, price validity will apply afresh for a period of _**60**_ days from the date of according final price by bidder (or) upto original validity period, whichever is later.

(2) **Guarantee/ Warranty: 36**_ months from the date of dispatch of goods or _30_ months from the date of commissioning of goods, whichever is earlier.

(3) **Performance Bank Guarantee (PBG):** PBG will be applicable for a period of **_36_** months from the date of dispatch of goods + claim period of **03** months, for a value equal to 10% of the basic value of the purchase order. Refer Clause "H" of Instructions to Bidders. Also note that PBG should be in the format specified in Annexure VII of ITB and no deviation to this format will be allowed.

Note: In case PBG is not furnished, the 10% basic amount will be withheld from the supply invoice. This withheld amount will be paid either against submission of supplementary invoice & Original PBG (or) against supplementary invoice without PBG after expiry of Warranty period.

(4) **Despatch Documents:** Complete set of despatch documents (original + 1 photocopy set) as per Purchase Order shall be forwarded to Purchase Executive/BHEL directly. Depending upon the project/customer demands, despatch documents may include one or more documents from the following: Invoice (02 sets of original), Lorry Receipt (L/R), Packing List, Air Way Bill (AWB)/Bill Of Lading (BOL), Copy of High Sea Sales (HSS) agreement, Country of origin certificate, NIL Short Shipment Certificate, Original Performance Bank Guarantee (directly from issuing bank to BHEL), insurance intimation letter, POD (Proof of Delivery) on L/R.
The precise list of despatch documents needed for the project will be specified in the Purchase Order.
One set of Invoice, Packing List and L/R or AWB shall be e-mailed/faxed immediately to BHEL-EDN after despatch.

(5) **Freight Charges (for indigenous scope of supply):** Freight charges shall be to vendor's account. Vendor to quote reasonable lump sum Freight charges separately, with applicable tax in priced offer.

(6) Any additional commercial term or deviation in commercial term, if sought by any vendor, should be clearly brought out in Part -1 bidding form special commercial conditions of contract. Any additional commercial term or deviation in commercial term mentioned anywhere else shall be ignored and not be considered for evaluation.

(7) **Evaluation criteria for tendered item/s:**

(a) Items will not be split on item-wise lowest offer. Items shall be evaluated and procured as a combined package. (or)
~~(b) Items will not be split on item-wise lowest offer. Items shall be evaluated and procured as a combined package.~~

(8) **Integrity Pact:** Execution of Integrity Pact is mandatory for this tender (Refer Clause on IP in the tender attached). Original signed and sealed hard copy of Integrity pact is to be sent to below address for considering bidders offer. It should reach within due date of tender submission-
SAVITHA B
CE-MM-PR, BHEL –EDN , Mysore Road,
PB No. 2606, Bangalore – 560026

In case original hard copy of signed and sealed Integrity pact is not received at the time of Part-1 bid opening, bidder's offer may be rejected for non-compliance of tender condition.

(9) **Annual Maintenance Contract :** Not Applicable

With this, we hereby confirm that all the terms & conditions as indicated in Instructions to Bidders (Document Ref: CE: PR: 001- Rev 01) & General Commercial Conditions for Contract (Document Ref: CE: PR: 002- Rev 01) are accepted without any deviation.

Vendor's Signature with Seal

Note :

1. Any technical or commercial clarification for this tender can be raised within one week of floating tender. No clarification will be entertained by BHEL after given cutoff period. der
2. All interested bidders may attend a "pre bid meeting" at BHEL EDN on 23.09.2019.
3. endor has to attach itemwise break-up price for material (Main supply and Mandatory spares) in line with BOM of specification in price bid

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PROJECT : YADADRI 5 x 800 MW

CUSTOMER : TELANGANA STATE POWER GENERATION CO.

CONSULTANT : TCE

EQUIPMENT : Plant Security System consisting of Perimeter Intrusion Detection System, CCTV system and Patrol guard system

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REVISION HISTORY SHEET

REV No.	DATE	NATURE OF CHANGE	REASON	PREPARED BY	REVIEWED BY	APPROVED BY
00	10.09.2019	FIRST ISSUE	---	AKS	KRS	SAP

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SECTION-A : GENERAL INSTRUCTIONS TO BIDDERS:

Bidders are required to submit techno-commercial offer for supply, installation and commissioning of Plant Security System (PSS) consisting of Perimeter Intruder detection system, CCTV system and Patrol Guard system, for TSGENCO's Yadadri 5x800MW project (referred as customer/owner in later sections of the document).

1. Bidder can offer alternate makes instead of customer approved makes as mentioned later in the specification. However, system integrator & component makes (if not already approved) require customer approval. Bidder must furnish following documents for taking up with customer their approval as system integrator as well as their offered makes:

i. Company Profile of the bidder
ii. Tabular List of CCTV system already executed / orders in hand of bidder (especially in power plants, cement plants, petroleum refinery, steel plant, coal mines) clearly mentioning name of project, year of supply / commissioning / handing over, make of camera and contact details of user/owner etc.
iii. Unpriced Copy of Purchase order, Performance certificates, handing over protocols of CCTV system commissioned by bidder.
iv. Technical compliance of offered unapproved makes along with supporting documents of past supplies / performances, if available.

The credential documents submitted by bidder (as per above list) shall be submitted to customer for approval of bidder as system integrator and their offered component make. Technical offer of only such bidders who are approved by customer as system integrator will be evaluated for further consideration in the tender. Hence bidders are advised to submit their complete and comprehensive credentials. Further, in case bidders' offered items make is not approved by customer, bidder will be given opportunity to change make of such items along with associated hardware configuration / software make etc to approved makes without any price impact.

2. If required during evaluation of Technical offers/bids, bidder should visit BHEL Electronic Division, Bangalore, for discussions, on 3 day notice. Further in the event of ordering, Bidder shall accompany BHEL representative (if required) for discussions with customer / consultant at their works for approval of the system documents.

3. **This specification does not prohibit any bidder to submit their offer along with clause wise deviation from the specification. Changes in technical specification / Scope of supply/service, BOM, approved makes of components etc shall be informed to Participating bidders only.**

4. Bidders can submit only one bid. If multiple bids / optional bids are submitted by a bidder, then both offers of such bidder will be summarily rejected.

5. All bidders, irrespective of their existing approval with BHEL / other units of BHEL / customer, should submit all documents as called for submission in various sections of this specification.

6. All documents against this Tender/Specification shall be submitted in English only.

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SECTION-B: Pre-Qualification Requirements (PQR)

a) Bidder must have an experience of supplying and completely commissioning at least one "IP-CCTV system", consisting of minimum 150nos of cameras, in a power plant or an Oil & Gas industry and the complete system shall be in operation for at least one year as on techno-commercial bid submission due date of this tender. Following supporting documents may be submitted for meeting this criteria:

   i. *Unpriced Purchase Order (PO) Copies, for supply & services, issued in name of bidder*
   ii. *Complete Bill of material (either part of PO or owner approved document)*
   iii. *Commissioning/handing-over protocols of complete system signed by owner of project*
   iv. *Performance certificate issued by owner of project, stating the complete system is working satisfactory for minimum one year.*

b) Bidder should be presently an active system integrator of IP CCTV system, having at least two order of IP CCTV system in hand or have executed for supply and commissioning an IP CCTV system for industrial installations within last three years as on techno-commercial bid submission due date of this tender. One of the following supporting documents may be submitted for meeting this criteria:

   i. *Unpriced Purchase Order (PO) Copies, for supply & services, issued in name of bidder and complete Bill of material (either part of PO or owner approved document)*
   ii. *Commissioning/handing-over protocols of complete system signed between bidder & owner of project and indicating quantity of cameras.*

c) Bidders who are based outside India and are participating in this tender, shall have authorized representatives in India for support related to documentation, technical support, troubleshooting, Erection, Commissioning and other co-ordination work.

   Letter from bidder detailing Indian representative details should be provided. Bidder shall also furnish an undertaking letter that in case of change in their Indian representative / agent, bidder shall continue to support for supply, commissioning and troubleshooting of the complete system procured through this tender.

All PQR criteria mentioned above are to be met by bidder in order to qualify for further consideration in this tender. Hence bidder must submit all documents as mentioned above failing which bidder's offer is liable for rejection.

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SECTION-C TECHNICAL SPECIFICATION

1.00.00 INTENT OF SPECIFICATION

1.00.01 This specification is intended to cover the design, documentation, manufacture/assembly, Inspection and testing at Bidder's works, delivery including packaging, crating in road / sea worthy (imported item) packing, erection, installation and commissioning of the complete Plant Security System (called as PSS in later section of the specification), as required, for safe and trouble free operation.

1.00.02 It is not the intent to completely specify all details of design and construction details herein. Nevertheless, the system shall conform to high standard of engineering, design and workmanship in all respects and shall be capable of performing satisfactorily in continuous commercial operation under the environmental condition of the project.

2.00.00 ABBREVIATIONS

BOQ	- Bill of Quantities
CCB	- Central Control Building
CCTV	- Close Circuit Tele Vision
CCR	- Central Control Room
DCS	- Distributed Control System
DVSP	- Digital Voice Storage Playback
GCC	- General Conditions of Contract
LED	- Light Emitting Diode
LOI	- Letter Of Intent
MDF	- Main Distribution Frame
MTTR	- Mean Time To Repair
PC	- Personal Computer QAP - Quality Assurance Plan
RH	- Relative Humidity RMS - Root Mean Square
SPL	- Sound Pressure Level
UCR	- Utilities Control Room
UHF	- Ultra High Frequency
UPS	- Uninterruptible Power Supplies

3.00.00 SCOPE OF WORK AND EXCLUSIONS

3.01.00 **GENERAL**

3.01.01 The scope of work in this document specifies the technical & contractual requirements for the design, supply, erection, testing and commissioning of PSS and all accessories for Yadadri 5x800MW project.

3.01.02 Bidder shall be fully responsible for compliance of the system to be supplied in line with the requirements of this specification.

3.01.03 Provisions included in the specification will not be limitative to the scope of work and bidder shall be responsible for supply, installation, erection and commissioning of complete system.

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3.02.00 INCLUSION IN SUPPLY

This system is for the entire power plant covering BTG area, Balance of Plants (BOP) areas like Coal Handling Plant, Ash Handling Plant, Plant Water System, CW, ACW System etc and along the plant boundary. The scope of supply of this specification includes Design, fabrication, manufacture and assembly, inspection, shop testing at manufactures works, supply, transportation to site, site testing, erection and commissioning and performance testing of the entire plant Security System as specified in this tender documents. The equipment and materials included for plant security system are as follows:

3.02.01 **SCOPE OF SUPPLY**

a) One set of redundant Camera cum database Server at each of the followings zones:
   i. Common for all camera of all five units (total 270cameras)
   ii. Camera of Common plant areas (total 148nos)
   iii. Camera of CHP area (total 120nos)
   iv. Perimeter cameras (90nos)

   The server shall be supplied with mouse, keyboard and other accessories as required. 22nos of fixed thermal camera shall have a separate network and the same will be controlled using suitable configuration of an OWS.

b) IP PTZ camera with housing, pan / tilt head, power supply, mounts and other accessories complete as per detailed technical specification specified later in this document.

c) Integrated IP ready outdoor fixed camera with motorised zoom with housing, power supply, mount other accessories complete as per detailed technical specification specified later in this document.

d) **LVS,** 24'' TFT Monitor, PC, mouse, keyboard with joysticks and accessories for Security Office, CHP etc

e) 32'' TFT Monitor with PC, mouse, keyboard with joysticks, and accessories.

l) Video Motion Detection (VMD) system for the motion detection from each video camera and video surveillance software.

m) Network Access Storage with RAID-5 configuration having capacity to record up to 60 seconds of pre-alarm and 60 seconds of post-alarm video from camera for a duration of 10 days.

n) L3 Core industrial grade switch with optical port and Ethernet electrical port with all accessories for each Camera cum database server set and for fixed and PTZ cameras in that zone.

o) L2 Industrial grade managed Ethernet Distribution switch with optical interface and Ethernet electrical ports and other accessories, enclosed in a **weather-proof IP-65 junction box** at the base of the camera pole / mounting place of camera.

p) 4 Core Single mode OFC armoured cable

q) Patch panel, pigtails, Cat6 patch cord, SC ST type connectors etc.

r) All types of Interconnection cable between PSS & Other systems, device etc.

s) Twisted, 4 Pair UTP CAT6,1000 MBPS, Base-T cable between CCTV camera & Interface Box at the base of camera.

t) All types of Cable connectors for the above Cables.

u) Power Distribution Assembly and other accessories complete on as required basis as per site requirement.

v) Mounting & Installation Accessories.

w) Patrol Guard System comprising of Patrol Guard Card Reader and collection points

x) Consumables for erection and commissioning of PSS

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3.03.00 **SCOPE OF SERVICE**

Following service shall be provided by Bidder for all equipment & systems supplied under this specification:-

a) Carrying out detail engineering, preparation and submission of all drawings as specified elsewhere in this specification including preparation and submission of detailed bill of materials, configuration drawing showing location of all system equipment and components, cable schedule, cable tray/rack and conduit routing.

b) Inspection and testing at Bidder's works as per the Quality Assurance Plan.

c) Packing and forwarding of all equipment (except cable drums) included under this specification in a container with lock and key. The bidder shall be responsible for safe storage of the items inside the container against weather. It shall be bidder's responsibility to take materials out of container for erection and commissioning of the systems.

d) Installation and Commissioning of the PSS which shall involve deploying labour (skilled and unskilled), supervisory personnel, engineer and also erection tools and tackles, testing equipment, consumables & hardware, transport and storage of electronic items in a weather proof container for timely and efficient execution of the contract work.

e) The installation and commissioning of complete PSS will be in bidder scope of services, except specific exclusion mentioned in the specification section 3.05.00. This will include installation and commissioning of all cameras, servers, switches, software and all other activities related to PSS on as required. Termination of all cables shall be in bidder's scope of supply and services.

f) Bidder will, during the time of detail engineering and installation of the quoted system, interact and coordinate with any other agency regarding collection/retrieval of inputs/information/data and all such works shall be under the scope of this Bidder. If necessary, the Bidder shall contact the purchaser (BHEL) for clarifications before submission of their Bid.

g) Training to be provided to Owner's (TSGENCO) personnel for operation and maintenance of the complete system.

h) Site modification and preparation of "as-built" documentation".

i) Project management and scheduling including micro-planning in specific work area and reporting weekly progress.

j) Bidder has to provide the services required for completeness and correctness of the system irrespective of whether it is mentioned in the specification or not.

k) The complete installation and commissioning of PSS shall be done as per availability of fronts in the project and would have to be done spreading over a period up to 5-6 years from delivery of the materials at site. The installation and commissioning activity would therefore require multiple visit to site for survey, planning, cable schedule preparation, supervision of camera mounting, server installation & commissioning and camera commissioning etc.

3.04.00 SCOPE OF DOCUMENTATION

01. Prepare work definition and interfacing requirements of all system components.
02. Provide system design documentation.
03. Provide all commissioning and test procedures.
04. Provide inspection, commissioning and test procedures for Owner's approval.
05. Operating & service manuals and handbooks.
06. Tag all equipment as per Project Specification Procedure.

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3.05.00 EXCLUSIONS IN SCOPE OF SUPPLY/SERVICES FOR BIDDER:

a) Supply of power cable (being supplied separately by BHEL)

b) Laying of all types of cable like power cable, CAT-6 cable and FO cable

c) Splicing/termination of all FO cables in LIU

d) Lifting of 42U panel from stores to control room

e) Fixing of camera (using suitable camera mount) and junction boxes

f) Erection of poles and laying of conduits/cable trays

(The above services mentioned in exclusion shall be done by BHEL site)

4.00.00 PERFORMANCE GUARANTEE

4.00.01 The Systems / Equipment to be supplied under this specification shall meet the guaranteed performance specified in the enclosed data sheet, specification sheet and technical attachment sheet when operating at the rated / specified conditions. The acceptance of the System / Equipment shall be subject to satisfying these parameters during FAT at Bidder's works and at site installation in complete installed/commissioned condition.

4.00.02 Performance figures quoted by Bidder shall be guaranteed within the tolerance permitted by relevant standards. In case of failure of the equipment to meet the guarantee, the equipment may be liable for rejection or the decline in performance from the guaranteed performance figures will be rectified by the Bidder without any extra cost.

5.00.00 WORK SCHEDULE

5.00.01 Bidder shall ensure that the delivery of Equipment and accessories shall meet the project schedule.

5.00.02 On finalization of the Contract, a detail supply program for manufacture shall be furnished by Bidder for approval.

5.00.03 Technical documentation such as Data Sheets, Quality Plan & Drawings are required to be submitted after issuance of Purchase order to successful Bidder. The delivery of the cleared quantities shall be completed progressively from the date of Owner's approval of technical documentation

6.00.00 REFERENCE DOCUMENTS' CODES AND STANDARDS

6.00.01 The entire system and accessories materials shall conform to the requirements of the latest issues and most recent revisions and amendments of the standards listed below and to the local laws and regulations applicable to the Project.

6.00.02 This Specification shall be read in conjunction with material Standards, codes, practices and regulations.

6.00.03 Following non-exhaustive list of specific codes and standards shall apply to the all cables and accessories provided in response to this Specification. Mandatory regulations shall supersede this specification.

6.01.00**GENERAL CODES AND STANDARDS**

6.01.01 Materials shall be designed, manufactured and tested in accordance with the latest applicable Indian Standards (IS), IEC and other internationally recognized standard except where modified and/or supplemented by this specification. Performance figures quoted shall be guaranteed

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within the tolerance permitted by relevant standards. In case of failure of the equipment to meet the guarantee, the equipment may be liable for rejection.

6.01.02 It shall be Bidder's responsibility to comply with the requirements of all Codes and Standards which are applicable to meet the Specification.

6.01.03 The following Codes and Standards form a part of the Specification:

ANSI : American National Standards Institute
BS : British Standards
CCITT : Consutative Committee on Telephone and Telegraph
EIA : Electronics Industry Association
FM : Factory Mutual
IEC : International Electrotechnical Commission
IEEE : Institute of Electrical and Electronic Engineering
IS : Indian Standard
ISA : Instrument Society of America
NEC : National Electrical code
NEMA : National Electrical Manufacturers Association

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI S3.5 Methods for the Calculation of the Speech Intelligibility Index

INDIAN STANDARD (IS)

IS-5	Colour for ready mixed paints and enamels.
IS-694	PVC insulated cables for working voltages upto and including 1100 V.
IS-1554	PVC insulated electric cables.
IS-3961	Recommended current ratings for cables.
IS-3975	Mild steel wires, formed wires and tapes for armoring of cables.
IS-5831	PVC insulation and sheath of electric cables.
IS-8130	Conductors for insulated electric cables and flexible cords.
IS-9302	Characteristics and methods of measurements for sound system equipment.
IS-9537	Conduits for electrical installations.

The edition or revision of the Codes and Standards shall be the edition current at the date of the Contract.

7.00.00 PROJECT INFORMATION

7.01.01 Wherever environment condition is specified as 'Indoor', it shall be considered as air-conditioned having temperature between 20-25 degrees C and RH of about 40%. For outdoor components, ambient operating temperature shall be 55 Deg C.

7.01.02 All outdoor equipment shall be exposed to high humidity & oil/water vapour, coal dust and fly ash laden environment, vibration and electromagnetic interference are also generally encountered in the project's environment.

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8.00.00 TECHNICAL DESCRIPTION

8.01.00 DESIGN BASIS OF PLANT SECURITY SYSTEM

8.01.01 The PSS architecture shall be distributed IP based. The Camera cum Database Servers shall be in Hot Stand By mode and will be installed at CCR-1, CHP CR, common plant Area CR and Main security Gate. Access of all camera video shall be provided through using router switch to authorised users to view the camera video remotely. Besides these nodes, other nodes over the plant area shall also exist. Such nodes shall be connected over 1GBPS Fiber Optic based ring network to Camera cum database server. The fixed cameras installed along perimeter of the plant along with their server, software, switches and accessories shall form Perimeter Intruder Detection System. The remaining PTZ cameras as well as thermal Cameras which shall be installed in plant areas will form CCTV system. The cameras type shall be indoor / outdoor PTZ IP type and outdoor fixed IP camera with motorised zoom and shall be distributed as below:

Unit-1	: 54nos PTZ cameras
Unit-2	: 54nos PTZ cameras
Unit-3	: 54nos PTZ cameras
Unit-4	: 54nos PTZ cameras
Unit-5	: 54nos PTZ cameras
CHP Area	: 120nos PTZ cameras
Perimeter cameras	: 90nos Fixed cameras with motorised zoom on perimeter
Common Plant Area	: 148nos PTZ cameras
	: 22nos Fixed thermal camera for transformer/ switchyard in a separate network
Total	**: 650 cameras**

8.01.02 The main node at CCR shall consist of Camera cum Database Server, Core Switch, and Distribution switch along with other similar nodes for CPA and CHP cameras. Remaining other nodes shall comprise L2 field Ethernet switch, media converter and power supply converter to provide the operating voltage of the camera. Nearby cameras shall be connected to the field ethernet switch directly over Cat-6 cable if the distance of the camera from ethernet switch is less than 90 meters (or as per limitation of bidder's offered system). Cameras beyond 90mtrs shall be connected using FO cable.

8.01.03 The following types of IP cameras shall be used in plants.

a) Inside plant outdoor area : Outdoor PTZ dome cameras
b) Inside Control Room and protected area: Indoor PTZ dome cameras
c) Perimeter camera : Outdoor fixed Bullet camera
d) Transformer & Switchyard camera : Outdoor fixed thermal cameras

8.01.04 The perimeter of the power plant shall be covered with outdoor IP Fixed cameras with motorised zoom, placed at regular intervals to ensure that any intruder along perimeter wall is identified. Field ethernet switch of shall be installed at intermediate locations to connect nearby perimeter cameras to its ethernet ports. The incoming and outgoing OFC link will be connected to SFP fiber ports and such ethernet switches will form an OFC backbone in ring topology for PERIMETER INTRUDER DETECTION SYSTEM system. Four monitors with mouse and keyboards will be installed at Gate Security office for remote monitoring.

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8.01.05 Thermal cameras shall be installed to monitor switchyard and all transformers at TG building. They shall have a separate network, which shall be extended to DE-Electrical office, Switchyard control room, main CCR, SE office and CE office. OWs with monitors, mouse, keyboard and joystick shall be installed in all these rooms.

8.01.06 230V AC UPS power supply shall be provided to 42U panel in all unit control room and other offsite control room like CHP / AHP / Water system etc. It shall be bidder's responsibility for distribution of this power for powering PSS components mounted in PSS panel as well as all cameras and switches installed in field. Necessary converter for powering the PTZ and fixed cameras shall have to be arranged by the bidder. In case there are some camera / switch which are very far from any main plant/ offsite UPS, power supply to all such camera and switch shall be provided using mini UPS of suitable rating with 1hr back up. Power distribution system of such camera shall also be in bidder's scope.

8.01.07 Cameras at certain strategic location and all perimeter camera shall have motion detection feature. Any motion in view of these camera shall generate alarm to operator and also such motion should be tracked by nearest PTZ Cameras.

8.01.08 The PSS network will be a distributed ring connected through SFP ports of switches. The micro ring will be formed to connect all geographically nearby cameras. These rings will be connected to each other and overall, they will make a circular ring providing single level of redundancy in the event of a single cut in OFC backbone. Ethernet switch will be used at the common node points to interconnect the micro rings to each other. An illustrative micro ring are defined below, however, the actual micro ring shall be as per geographical grouping of cameras in a zone:

RING-1 (unit cameras)
CCR-Boiler and Turbine Area-> CPU Generation Plant -> DG & Compressor House -> 400KV Switchyard 400KV Switchyard Control Room Service Build HFO, LDO Pump House Ash Water Pump House->CCR

RING-2
CCR-> Ash Slurry Pump House AHP Control Room AHP Compressor House ->ESP Control Room ->FGD Plant->Vacuum Pump House->Silo Utility HCSD Pump House CCR

RING-3
CCR->Switch Yard Control Room->DM Plant Building->Colling Water Pump House->CW Plant->Chemical House->Clarified Water Pump House-> Centrifuge Building->CCR

RING-4
CCR-> CHP Area CCR

8.02.00 **RECORDING EQUIPMENT**

8.02.01 Each Video Recording Device shall have a hard disk capacity capable of continually storing images produced for up to 10 days before overwriting commences. Facilities shall be provided to allow continuous recording of images when in playback mode. Control and set-up of the Video Recording Device shall be possible from the operator keyboards via serial data link.

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8.02.02 Facilities shall be provided for archiving stored images to Server & NAS Storage Device.

8.02.03 The Camera cum database server shall be located in CCR in the same equipment racks as the NVR's. The Camera cum database server shall be 19" rack mount. TFT monitor and control keyboard shall also be used for operation of the cameras and monitoring the views.

8.03.00 **VIDEO MOTION DETECTION OPERATION REQUIREMENTS**

8.03.01 A camera based Video Motion Detection (VMD) shall be used to process the motion detection from each video camera.

8.03.02 In the event of an alarm, PSS controller shall display live video (on a single monitor in quad view) from the two cameras in the corresponding zone in alarm and two cameras from adjacent zones (one camera from each side of the zone in alarm). At the same time, the Network Video Recorder (NVR) shall record up to 60 seconds of pre-alarm and 60 seconds of post-alarm video from these cameras. This operation shall be available at the server.

8.04.00 CCTV CAMERA CUM DATABASE SERVER FEATURES

- The camera cum database server shall be of scalable server (with 20% spare hardware and license capacity in each zone) and client based architecture that allows full virtual matrix switching and control systems.
- The camera cum database server shall be installed on standard servers and storage technologies built on windows operating systems.
- The camera cum database server shall be able to intelligently scan an IP network for new devices (cameras or servers) along with automatic motion detection.
- It shall support a versatile rule based engine that makes it easy to automate different aspects of the system, including the control of cameras, system behaviour and external devices, such as lights and doors, based on events or time schedules, eliminating the need for manual control with numerous options including support to time profiles.
- The video analytics feature can be an integral part of camera or a part of camera cum database server. In case, separate server are required for running analytics, the same shall be offered by bidder within their quoted lumpsum price. The configuration of analytic server shall be same as server. The features shall be user configurable for each camera. It shall be possible to activate recordings automatically based on events generated by video analytics. These events shall also be logged and suitably alarmed on the monitors.
- The system administrator shall have rights to add/delete/configure users with rights. It shall be possible to view the rights of each user or the cameras which can be viewed / controlled by each user. It shall also be possible to add/delete cameras, configure cameras, assign priorities to users, configure alarm monitors etc. It shall also be possible to configure user groups with different rights and assign users to user groups. The system shall support unified log-in throughout the system and it shall be possible for any user to log-in from any location/client and access cameras/recordings and other features as permissible depending on his rights assigned to his log-in.
- Server software shall allow the clients seamless operation of all cameras regardless of the actual connection to different recording servers. Software shall allow the client applications to interact with all the camera cum database servers simultaneously and allow simultaneous display of live video/recorded video regardless of the zone in which the client is connected.
- It shall be possible to define priority based camera control rights for each camera or a group of cameras. The users shall be defined on a hierarchical basis with a minimum of three levels. A higher priority user can take control of camera being controlled by a lower priority' user. In addition the user

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shall have facility to request access of any camera and the existing situation permits the user shall be able to control the camera.

- On screen controls shall be provided to achieve remote operation i.e. PTZ operation of cameras.
- It shall be possible to view live video from cameras on the surveillance system from 1 to 32 per view.
- To access views of cameras on any PC with a client viewer application installed.
- Use multiple screens as well as floating windows for displaying different views simultaneously.
- View images from several cameras in sequence in a single camera position in a view – a so called carousel.
- View video from selected cameras in greater magnification and/or higher quality in a designated hotspot.
- Receive and send video through the matrix functionality, control PTZ cameras.
- Use digital zoom on live as well as recorded video.
- To activate manually triggered events.
- Get quick overview of sequences with detected motion.
- Get quick overviews of alerts.
- It is a requirement that all user actions on the system CVWS be recorded in a log file along with the security system or control system's actions. User actions include:
- Interventions such as manual recording and configuration setting changes.
- Cameras viewed, Video replayed, Video exported, Cameras pan/tilt/zoomed and preset switching.
- This log must also contain a history of the status of the system components. It shall list the status of all cameras, servers and other system components including when they were disabled or foiled. This log shall be maintained for a minimum period of ten (10) days.

PLAYBACK & EXPORT

- It shall be possible to playback simultaneously 32 cameras on the surveillance system, with a selection of advanced navigation tools, including an intuitive timeline browser.
- The Client shall support search of recorded video for motion event in user-specified areas of a camera image
- The VMS shall allow the operator to capture / Export video from the workstation. The recording shall be captured in a standard format, such as AVI, so as to allow playback using Windows Media Player. The recording shall include audio for video sources if audio recording is required.
- The Video Management System software shall provide fast evidence export by exporting in video to various formats, including video from multiple cameras in encrypted native database format with an included viewer.

Video Content Analytics (VCA) Software: License to handle a system of cameras (20% SPARE)

The Video Analytics (VA) shall be designed to provide Intelligent Video Analysis for 24/7 surveillance with support for devices from different bidders and support open platform Video Management System (VMS). The VA shall store alarm video and image files for export, and support Video from at least 10 cameras. The VA shall send alert Meta data with the following information so that alerts can be searched and categorized based on this information in the viewer.

- Timestamp (date & time), Alert Name, Alert Type, Alert location, Text Description, Region associated
- Face detection and Tripwire/Line crossing - Detect people or vehicle crossing virtual line in either direction (applicable for fixed cameras to be installed along perimeter)

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- Object Missing & object left / abandoned
- Smart auto PTZ control –Able to detect analytic rules like Tripwire on PTZ camera and then immediately do Pan, Tilt and Zoom to violator on violation of rules. After the PTZ operation, the software should enable it to come back home position and start monitoring for violation.
- Continuous auto PTZ control - able to continuously track the moving object using PTZ control on PTZ camera. The VA shall be able to track single object and multiple objects through Auto PTZ control.

8.05.00 **PATROL GUARD SYSTEM**

8.05.01 Purpose of the Patrol Guard system is to ensure that security guards on patrol duty are carrying out their duties diligently by recording the visiting time data for different locations.

8.05.02 The system shall comprise of a selected number of location tags mounted in various strategic locations of the Power Plant including the perimeter. The patrol guard recorder will record the date and time when the recorder is swiped on the magnetic strips.

8.05.03 The recorder shall be suitable for downloading the data into a PC.

8.05.04 The system shall be flexible to allow for addition / deletion or movement of monitoring locations.

8.05.05 The patrol readers shall be suitable for operating with standard batteries.

8.05.06 Five nos. of card readers shall be provided. Guard locations to be considered is 50.

8.06.00 SPECIFIC TECHNICAL REQUIREMENTS – SUPPLY

8.06.01 **Technical Requirement of PSS Systems**

This section comprises of the detail specification of the equipment like Camera, PC based operating station, NAS server, network switch, UPS, media converter, fiber termination box (LIU), optical fiber cable, Cat-6 cable, network rack and other accessories.

8.06.02 **IP Dome and Pendent and Box type Camera**

(Customer Approved Makes – Honeywell/Bosch/Pelco/Axis)

a) The colour low light sensitive cameras shall be designed for industrial application. The camera shall have high resolution with CCD/CMOS sensors including lens, shutter, IR cut filter.

b) The camera unit shall have latest compression standard (i.e. H.264 or better), 60/50 FPS transmission speed, provision of flash/SDRAM memory, LAN port and shall be capable of working on open architecture of Internet Protocol (IP). The cameras shall have features like automatic gain control, automatic iris control, white balance, auto backlight compensation, gamma correction etc. The cameras and VMS should be ONVIF compliant.

c) Two types of IP camera shall be used, one with motorized PTZ with remote control arrangement and the other fixed camera (box/barrel). The unit must have IP65 or better protection class and suitable for operating temperature of around 60deg C. Both dome enclosure and camera shall be supplied from same Make to ensure compatibility.

d) Outdoor cameras shall be provided with weather proof IP65 enclosure suitable for operation in dusty environment. The dome of the cameras shall have anti-dust coating to prevent accumulation of metal laden dust onto the dome. All cameras shall be provided with mounting frames suitable for

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mounting the same on wall/column/pedestal as required. Accessories such as blower and sun shroud for fixed cameras shall be provided.

e) Facility of camera recording in real time mode (25/15/10/5 FPS) as well as in any desired combination must be available in the system. Facility of camera recording shall be possible in CIF, 2CIF, 4CIF, Q-CIF as well as in any combination. The video shall be compressed using H.264 standard or better. The camera should have 50/60 FPS features.

f) The cameras shall have following minimum technical requirement :

i) High Resolution **Fixed** True Day/Night DNR Colour outdoor Camera with remote **motorised zoom**

01. Video Standard	: PAL
02) Image Sensor	: 1/3” progressive scanning
03. Effective Pixels	: 1920 (H) x 1080 (V)
04. Horizontal Resolution	: 540 TV lines
05. Minimum illumination	: 0.001 lx for colour image 0 lx with inbuilt IR ON
06. Synchronization	: AC line lock/internal
07. S/N Ratio (dB)	: >50 dB
08. Lens Control	: DC / VSD
09. White Balance	: AWC/ATW/MANUAL/IN/OUT
10. Power Source	: 240 Volt, 50Hz AC
11. Power Consumption	: As per Manufacturer standard
13. Lens Mount	: CS mount
14. Certification	: CE/FCC/UL
15. IR range	: 60mtrs

Day/Night Lenses for Fixed Camera With motorised zoom

OPERATIONAL

01. Image Format	: 1/3”
02. Lens Mount	: CS (Metal mount)
03. Focal Length	: 5.0 – 50.0 mm (10 X)
04. Focus Range (MOD)	: 1.0’ (0.3 m)
05. Angle of View	: Wide : 50° x 37° :Tele : 5° x 4°
06. Iris Range	: F1.6 ~ T360

Mechanical

01. Construction Housing	: ABS plastic

Environmental

01 Temperature Operating	: 10°C to 60°C
Storage	: 10°C to 60°C
02. Relative Humidity	: Up to 90%

Regulatory

01. Emissions	: EN61000-6-3:2001

Enclosure Housing

01. Camera Mounting	: Reversible slotted camera

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02. Viewing Window : Nominal Clear 1/8" double density glass
03. Cable Entry : 3 glands
04. Construction : Extruded and die-cast aluminum
05. Finish : epoxy powder coating
06. Environmental Rating : IP65
07. Operating Temp : 10°C to 60°C

ii) HD PTZ camera

01. Video Standard : PAL
02. Image Sensor : 1/4" Ex-view HAD CCD / CMOS
03. Effective Pixels HD : 1920 (H) x 1080 (V)
04. Minimum illumination : 0.005 lux for colour, 0.001 lux with IR filter removed
05. Lens : f/1.4 (focal length, 3.4~119 mm;
06. Synchronization : Internal
07. S/N Ratio (dB) : >50 dB
08. Angle of view : 48° (wide end) to 2.8° (tele end)
09. Angular Travel : Horizontal: 360° continuous Tilt: 5°- 90°
10. Speed (Manual Mode) : Pan : Variable from 0.10° to 300°/sec.
Tilt : variable from 0.10° to 120°/sec.
11. Alarm Input, Output : 4 Input and 1 Output
12. AES (sec) : 1/50 - 1/10,000 sec
13. Zoom : 30× Optical Zoom, 12× Digital Zoom
14. White Balance : AWC/ATW/MANUAL/IN/OUT
15. Image Enhancement : Integrated/Selectable
16. Video Motion Detection: Integrated
17. Power Source : 240Volt,50Hz AC
18. Power Consumption : As per Manufacturer standard
20. Operation Temperature: 10°C to 60°C
21. Protection class : IP65
22. Lens Mount : Motorised zoom lens / CS mount
23. Certification : CE/ FCC/UL

iii) Fixed Thermal cameras

01. Viewing distance- upto 250mtrs
02. Features like line crossing, intrusion
03. NETD: <50mk
04. Effective Pixels: 384 (H) x 288 (V)
05. Adaptive Automatic gain control
06.3D DNR
07. Advanced fire detection
08. Temperature exception display on screen
09. Response Waveband: 8-14Um
10. Temp range: 0 to 350Deg C
11. Temp accuracy: upto +/- 5Deg C
12. Video Compression: H.264 or equivalent
13. Alarm input / output: 1no min
14. Working temperature: 0-60Deg C
15. Protection Level: IP65 or above

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8.06.03 Mounting of PTZ Dome and Pendent Camera

a) The wall mount shall be constructed of high tensile cast aluminum which can be mounted directly to a vertical load-bearing surface and supports up to 15kg. The mount shall have a covered weatherproof cable access hole for ease of installation.

b) The parapet and flat-roof mount shall be designed for use with any PTZ dome. It shall have facility that allows for easy installation of the dome without having to twist the dome and wiring. The mount shall be designed to swivel within small clearance limits. The mount shall be constructed of heavy-duty steel.

c) The mounting shall support up to 10kg and shall withstand winds up to 75 mph when properly fastened to a support structure.

d) The ceiling pendant mount shall be designed for use with any PTZ dome. It shall be constructed of heavy-duty steel. The mounts directly to a horizontal load-bearing surface and supports up to the maximum load of the camera and enclosure.

8.06.04 **PC based Video Monitoring and Control Stations (OWS)**
(Customer Approved Make- Dell / HP / IBM-Lenovo)

Each PC based control and monitoring station shall be provided with the PC, 24" TFT colour LCD monitor, keyboard and mouse. The PC shall be suitable for usage on 24X7 basis. The PC shall be provided with latest configuration and technology available in the market at the time of supply with following minimum configuration.

Control and monitoring station:

1. Processor : Latest, minimum Intel Core i5
2. Configuration : Tower
3. Internal clock : 3.2 GHz (minm.)
4. Architecture : 32 bit
5. Video Card : PCI
6. RAM : 4 GB (Minimum) DDR
7. Hard drive : 500 GB SATA
8. Cache : 512 KB Level 2
9. CD/DVD Drive : CD - Both Read & Write for OWS. Both CD & DVD Read & Write for ES
10. Audio controller : 16-bit
11. Operating system : Latest Windows
12. Graphic accelerator : 8MB (min) or as required for the offered HD camera system
13. Communication ports : 1nos. (min.) Ethernet ports(1000 MB) ,
    4 nos. USB ports (min)

Monitor: (Customer Approved Make – HP / DELL / IBM-LENOVO / SAMSUNG)

1. Type : TFT monitor
2 Screen diagonal : 24 inch flat
3 Display : XGA or better
4 Resolution : 1024 X 768 or better
5 Degree of protection : IP-30
6 External Controls : Brightness, contrast, Horizontal / Vertical amplification & shift
7 Power supply : 240 V, 50 Hz, 1 phase
8 Ambient temperature : 0-50 Deg C
9 Humidity : 95% non-condensing

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Camera cum Database Server:
Customer Approved Makes- Dell / HP / IBM -Lenovo

1.1.1	Form factor	Rack mountable
1.1.2	Processor	Quad Core Intel® Xeon® E5-2609 V2 2.5GHz with 10MB L3 Cache.
1.1.3	No. of Processors	Support for 2 nos
1.1.4	Motherboard	Intel® C600 Series Chipset
1.1.5	Memory	16GB (2 * 8GB) or higher, populated with registered DDR3 memory. The Server should support upto 24 memory slots or higher.
1.1.6	Memory protection	Server should support memory protection technologies such as: Advanced ECC, Lock-step mode and online spare memory.
1.1.7	Disk bays	Server should support minimum two 2.5" HDD bays as Standard, expandable to four HDD bays. The chassis should be capable of supporting SAS/SATA/SSD drives.
1.1.8	Internal storage	1T GB 15K RPM SFF HDD SAS.
1.1.9	RAID support	6 Gbps SAS Raid Controller with support for RAID 0/1/1+0/5/5+0 with 512MB Flash Backed Write Cache without the need for battery.
1.1.10	Networking features	Total 2 Ports: One 1Gbps Gigabit Server Adapters with TCP/IP Offload Engine One Dedicated remote management port for Remote Management.
1.1.11	Ports	USB 2.0 support with minimum 4 ports
1.1.12	PCI slots	Min 4 PCI-Express slots using single processor
1.1.13	Media bays	DVD Optical Drive within the Server.
1.1.14	Redundancy	Redundant Power Supply & Fans to be loaded from day one.
1.1.15	Hot-swap components	Power supplies, Fan and hard disk drives.
1.1.16	OS Support	Microsoft Windows Server 2008 R2, Microsoft Windows Server 2012, Red Hat Enterprise Linux 6 or Above, SUSE Enterprise Linux Server, VMware vSphere 5.x or above.
1.1.17	Operating System	Microsoft Windows Server 2008 or later.
1.1.18	Keyboard& Mouse	USB Keyboard / USB Optical Mouse.

Large Video Screen (LVS) -
Customer Approved Make: PLANNER(USA)/BARCO(NOIDA)/DELTA(INDIA)/CHRISTIE(USA)

Bidder shall supply Sixty seven (67) inch or similar Large Video Screen (LVS) display unit in 1 (one) row upright in front of the operator in CCR/other control room/security gate complex with seamless integration with PSS system control and monitoring of the camera video. The System shall be configurable in such a way that output from server or CCTV monitoring PC can be directed to LVS.

a) Large Video Screen system shall be based on Digital Light Processing Technology. The software shall have capability to display multiple windows on the screen. The system shall have facility to zoom on any part of the display. Lamp shall be LED type with lamp life more than 60,000 hours.

b) The LVS shall have the following minimum features.

1. Cube & Controller: Cube & Controller should be from the same manufacturer.

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2. Manufacturing: OEM should have a manufacturing setup in India for Video Walls running successfully for the last 3 years or more.
3. Reputed company: The OEM should be an established multinational in the field of video walls and should have installations around the world.
4. Chip Type : Chip 0.95" Digital Micro Mirror Device
5. Resolution : 1400 x 1050 native DMD chip resolution
6. Light Source Type : LED light source with separate LED array for each colour (RGB)
7. Brightness ANSI : Minimum 700 Lumens
8. Brightness Uniformity : ≥ 90 %
9. Dynamic Contrast : 1400000:1 or more
10. Redundant Dual Supply : Cube should be equipped with built in a Dual Redundant Power Supply
11. Hot Swappable Power Supply : Cube should have a Hot swappable Power Supply In built
12. Control : IP based control to be provided
13. Remote : IR remote control should also be provided for quick access
14. Screen to Screen Gap : ≤ 0.2mm
15. Screen Support : Screen should have a Anti Reflective Glass Backing to prevent bulging
16. Control BD Input Terminal : Input: 2 x Digital DVI
    Input: 1 x HDMI
    Input: 1 x 3G-SDI
    Input : 1 x Display Port
    Output: 1 x Digital DVI , 1 x 3G-SDI
17. Cooling Inside Cube : By Means of a heat pipe
18. Maintenance Access : Rear
19. CONTROLLER : Display controller : Controller to control Video Walls in a matrix of 5(C) x 1(R) with outputs , video inputs and Universal inputs along with necessary software's

Processor : Single Quad Core Intel® Xeon/i7 64-bit 2.0 GHz CPU or better Min 4GB
Networking: Dual-port Gigabit Ethernet Controller inbuilt Support for Add on Network adapters Support for Optical Fiber interface Adapters
Accessories : DVD-R,DVD+RW,, Keyboard, mouse
OS : Supports 64-bit Operating Systems Windows 7
Power Supply : (1 + 1) Redundant AC-DC high-efficiency

c) All connecting cable and accessories shall be supplied.
d) The display program shall be such that the entire viewing areas of the screens are utilized and sides are not left blank.

8.06.05 **Network Attached Storage (NAS) Server**

Customer Approved Makes- Dell / HP / IBM – Lenovo / camera OEM make

a) The network attached storage server shall be integrated with the storage hard disks and server built into the same tower/ rack enclosure. It shall run independently and store video data from all the cameras over CCTV network. The NAS server shall have required capacity for storing video data of cameras required for at least ten (10) days. The NAS server shall be configured for organized data storage on 24X7 bases, keeping on line auto back-up of data and auto purging of data for a prescheduled period at regular intervals.

b) The equipment shall also include back-up management with DVD storage and write options. Any back-up server with required software to work as interface controller shall be included as part of back-up management.

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c) The storage solution shall offer functionality for 100% tamperproof and legally presentable data. Any additional hardware or software that is required for the same shall be included in the scope. Licensing for this solution shall have to be provided for the complete supported capacity of the system.

d) The management shall be through user friendly GUI based and web enabled administration interface for configuration and storage management.

e) The system shall have hot spare disc facility, redundant hot swappable components like controllers, disks, power supplies, fans etc. and disaster recovery support.

f) The minimum technical requirement of NAS is given below :

1.	Net Usable Capacity	6 TB minimum, to be offered as required for recording the vide of all cameras in each zone
2.	Storage controller	Hot redundant with support for logical partitioning
3.	Hard Disc drive	Hot swappable SATA II HDD
4.	RAID support	Required RAID support shall be provided
5.	Client Operating system supported	NAS shall be compatible with client OS of latest and proven version of Windows
6.	Software	All required software (application, backup, Server OS etc.) with licenses
7.	Ethernet Interface	Min. 2 X 1GB RJ 45 connector for load sharing and fail over
8.	Ports	Min. 4 USB
9.	Protocol supported	TCP/IP, CIFS, NFS, HTTP, FTP, NTP, SNMP etc.
10.	Folder Management	Share Folder Level Permission, File Level Permission, Public Folder
11.	Quota Management	Share Folder Quota Control
12.	Event Notification	To be provided
13.	Back up Management	DVD
15.	Mounting	19” rack mountable
16.	Upgradability	Upgradable to higher version of software & higher storage capacity
17.	Security	Standard NAS security features shall be supported
18.	Safety standard	UL/EN

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8.06.06 **Network switch: L3 Core Switch and distribution switch (in Indoor locations)**

Customer Approved Make: Hirshmann

a) The bidder shall select the port architecture of switches considering no of fiber optic and CAT-6 terminations from camera ends as well as from PCs, servers and other equipment in line with the system configuration diagram to be submitted along with the offer.
b) The Central control switch shall be manageable type with minimum Layer-3 functionality. The switch shall have required nos. of fiber optic (FO)/SFP and RJ-45 port including 20% Spare ports for each type. No media converter shall be used for connecting OFC cable to switches. All the switches shall be fed from UPS supply.
c) All the switches shall operate with wire speed switching on the same Network Management Software and shall have required intelligence and synchronization to control, monitor and maintain the IP network of the PSS system. It shall be possible to administer all the switches from a pre define PC in the network.
d) The switches should be industrial grade with 10-45 Deg operating temperature range

8.06.07 **Network switch: L2 Distribution / Field Switch**

Customer Approved Make: Hirshmann

a) All switches shall be provided with power supply which shall have surge protection withstand capability of minimum of 10 KA surge.
b) All the switches shall be loaded with the same network management software which shall be administered from a pre-defined PC in the network.
c) The switch shall have required nos. of fiber optic (FO)/SFP and RJ-45 port including 20% Spare ports for each type. No media converter shall be used for connecting OFC cable to switches. All the switches shall be fed from UPS supply. Each port shall be of gigabit capacity.
d) L2 distribution switch shall be 10/100/1000Mbps for forming multiple distributed ring network
e) The switch shall be of operating temperature of 10-70 Deg C for field switch and 10-45Deg C for distribution switch which shall mounted in CCTV server rack.

8.06.09 **Network Management Software (NMS)**

a) The minimum technical requirement of NMS is given below:

01. Automatic topology discovery and creation of network maps for Layer 3 and Layer 2 network
02. Should have high level Network Inventory polling capability for IP Network nodes, All available L2 Switch , Camera, Modules , ports , Physical links , VLAN interfaces and all the other SNMP capable devices in the network
03. Should have powerful administration control
04. Detailed performance monitoring and management
05. Should have extensive fault management capabilities with Real time Event and Alarm notifications , System Logs and Audit trials
06. Scheduled Device configuration back-up and restore functionality

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07. Automatic Detection of configuration changes for easy trouble shooting and Isolation
08. Should support 3rd party devices and end points
09. Should have the fucntionality of Group provisioning / Scheudled configuration roll out management
10. Should have the ability to perform scheduled or Unscheduled network wide software or Firmware upgrades
11. Should have the ability to customise the NMS dassh boards as per the requirements
12. Should have the ability to perform / create group of devices for applying same task
13. Should have extensive centralised trouble shooting tools in built
14. Should provide the flexibility to the network administartor to assign task to an Indvidual network engineer and assign ownership / track the status of the issue resolution
15. The NMS solution should be preferably from the same Active switching bidder , in case bidders proposing for 3rd party NMS solution should provide all the interop reports certified by both the NMS bidder and Active switching bidder on seamless interoperability
16. All the required Hardware / Software for the NMS solution should be proposed by the bidder

8.06.10 **Not Applicable**

8.06.11 **Patrol Guard Hand Held Guard Tour unit**

SL. NO.	PARAMETERS	VALUE
1.	Smart Card Reader	Supported
2.	Real-time clock (RTC) with independent backup battery	Yes
3.	Cover case	Rugged ABS casing
4.	Checkpoints, events, route and patrolling plan	Programmable
5.	Generation of multiple patrolling reports	Yes
6.	Graphical layout of respectable area	Manageable through software
7.	Event Buffers:	1000
8.	Communication Port	USB
9.	Baud Rate	9600
10.	Read Range	6cm
11.	No. Of Guards	50
12.	Check Points (Stations):	500
13.	No. of Routes	255
14.	Rechargeable Battery	Lithium Ion / equivalent as per

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		manufacturer standard
15.	Software features	• Patrolling of Guards • Assigning Routes to Guards • Monitoring the guard routes. Missing Area Report • Generate multiple patrolling reports • Graphical layout of respectable area

8.06.15 **Cable Specification**

8.06.15.1 **Optical Fiber Cable**

Customer Approved Makes- Birla Ericsson /Aksh Fibre /HFCL /Finolex /D-Link /Terracom /Sterlite – Digilink

The bidder shall supply and install Optical Fiber Cable along with all cable accessories and fittings like Light Interface Unit, Surge suppressors, Opto isolators, Interface converters, Fiber Optic Card Cage, Fiber Optic Line Driver, Repeater/ Modem, cable glands, grommets, lugs, termination kits etc on as required basis. Optical Fiber Cable shall be 4 core. Each core shall be of ultra pure fused silica glass with UV cure acrylate suitable to withstand temperature between 20 and 80ºC. The cable shall have multiple mono mode fiber to avoid usage of any repeaters. . Fiber optic cable shall be of loose buffer tube design with 6 fibers per buffer tube (minimum). Interstices and buffer tubes shall be filled with water blocking compound such be made of materials like Poly-Butelene Terathylate (PBT). They shall be colored for easy identification.. Buffer tubes shall be stranded around Central Strength Member utilizing Reverse Oscillating Lay (ROL). Blank fillers shall be used as necessary to maintain circular cable structure. The central strength member shall be Fiber Reinforced Plastic (FRP) or other material with equivalent mechanical strength to provide both tensile and anti-buckling strength to cable. The interstices between buffer tube and jacket layers shall be protected from water intrusion by a combination of dry water blocking yarns and tapes. These dry materials shall be easily removable from core during cable preparation without use of cleaning solvent. In addition to central strength member, additional strengthening substance like aramid yarns shall be applied helically over the cable core to provide additional tensile strength to cable.

The cable shall be of dual jacket and armoured. Inner sheath consists of medium density poly ethelyne extruded over cable core. Two highly visible ripcords are placed under the jacket to aid in sheath removal. Electrolytically chrome plated corrugated steel taped (ECCST) armouring is provided around inner jacket to provide additional cable compression strength and rodent protection. The armour is covered with outer black MDPE sheath with FRLS and UV resistance properties. A ripcord is also placed underneath the armour for easy outer sheathing removal. The cable shall be suitable for a maximum tensile force of 2000N during installation and once installed, a tensile force of 1000N minimum. The compressive strength of cable shall be 3000N minimum and crush resistance 4000N minimum. Minimum bending radius shall be equal to or more than 15D.

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Specification for G.652 Monomode Fiber:

Sl. No.	Attribute	Value
1	Core Diameter	9±1 micrometer
2	Cladding Diameter	125±1 micrometer
3	Cladding non circularity	≤1.0%
4	Attenuation coefficient at (i) 1290 nm to 1340 nm (ii) 1525 nm to 1575 nm	<0.36 Db/km <0.25 Db/km
5	Chromatic dispersion coefficient at (i) 1310 nm (ii) 1550 nm	<3.5 ps/ nm.km <18 ps/ nm.km
6	Polarization Mode Dispersion (PMD) coefficient	≤0.5 ps/√km
7	Mode field diameter at (i) 1310 nm (ii) 1550 nm	9.2 ± 0.4 micrometer 10.50 ± 1.0 micrometer
8	Mode field concentrality error	≤0.5 micrometer
9	Proof test	≥1%
10	Fiber Curl	≥ 4.0 m
11	Macro bend test on fiber at 1550 nm	≤0.1 dB

The entire length of the cable shall be marked with the manufacturer name, month and year of manufacture, coded description of the cable based on Telcordia's (Bellcore) SR-2014 Suggested Optical Cable Code (SOCC), progressive sequential length marking at every meter interval on outer sheath.

8.06.15.2 **Specification of CAT 6 Cable**

SL. NO.	PARAMETER	SPECIFICATION
1.	No. of pairs	4 pair
2.	Conductor	Solid tinned copper
3.	Construction Parameters	Values
4.	Nominal DC Resistance	67 Ohms /1Km
5.	Nominal Impedance	100 Ohms+/- 15 Ohms
6.	Nominal Capacitance	46pf/ m
7.	Nominal Velocity of propagation	68%

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8.	Nominal Attenuation	100 MHz:-19.9 dB/100m 155 Mhz: -25.3 dB/100m 200 Mhz: -29.2 dB/100m
9.	Insulation Materials	Poly Vinyl Chloride
10.	Cable Outer Diameter	0.38 mm+/- 0.15 mm
11.	Nominal Outer Diameter	6.35 mm
12.	Bend Radius	0.90” for 6.35mm

8.06.15.3 Not used

8.06.16 **Video Management Software**

Customer Approved Make: The offered camera make & VMS make combination should have a one year satisfactory working track record as on bid submission date of this tender, in a CCTV system having minimum 150nos of cameras installed in a power plant or Oil & Gas industry

a) The software shall be modular and structured with high security measures and shall work on open platform for interfacing with any third party equipment. It shall include different checks to ensure correct functioning of the system such as prevention of corruption of software, prevention of loss/alteration of memory contents due to power failure or improper operational procedure.

b) The operation of the PSS system shall be software based. Selection, control, monitoring and recording shall be done through menu based operation by PC-keyboard and mouse. Any PC shall be able to access selection/control of any camera in the network. Each PC shall be loaded with required application software for viewing / controlling. The NAS server shall be loaded with required recording software.

c) The software used for viewing and recording purpose shall have required license to accommodate minimum 50% spare cameras. The software shall also be provided with required nos. of licenses for monitoring stations including 30% spares.

d) Required System and Application software shall be provided for following minimum features:

i) **Selection, Control and View**

Single Camera view
Multiple camera views upto the total licensed capacity
Full screen view
Sequence view of camera pre set positions
Minimum 10 nos of simultaneous users of a camera
Drag and drop connection control
Built-in electronic zoom function
On-screen or in picture PTZ camera control
Menu based camera controls like

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Focus/iris/zoom/pan/tilt/enable/disable
Mouse/PC-keyboard controlled PTZ

ii) **Administration**

Assigning IP address for all network components
Creating/modifying topology for the complete network
Adding & deleting of Cameras
Configuring groups
Preset camera sequences
Modifying settings for a camera
Modifying recording settings for a camera
Configuring which user shall view which cameras
Different security levels for allowing users to access view or control cameras

iii) **Recording Administration**

User activated recording
Event activated recording
Pre-scheduled recording
Continuous background recording
Playing back recorded video with date and time stamp
Alarms generation in case of irregularities like video loss, camera tampering, picture blurred, motion detection etc. with audio-visual alert on PCs
Automatic archiving of recording
Search for recording replay with respect to camera, date, time etc.
Replay controls like play, stop, pause, fast/step forward, fast / step rewind etc.

8.06.17 **Accessories**

a) **CAT6 UTP Cable**

Cat6 cable shall be Unshielded Twisted Pair (UTP- CAT6 Cable) category 6 LAN (local area network) four pair cable per box 305 mtr Blue Colour 23 AWG, which is UL listed, 3P certified and tested, conforming to the following standards in Cat 6 UTP cable like 250 MHz speed, IEC 11 801 edition 2.0, Nominal Velocity Propagation (NVP) 72%, as per EIA/TIA standrads and cable laying shall be through the existing MS/PVC conduit or floor raceways including connections etc as required complete in all respects. (Customer Approved Make: Legrand (LCS2)/Ortronics/ Luscent)

b) **Infomation Outlet (I/O) of CAT-6 UTP**

Information outlet shall be RJ45 Toolless Infomation Outlet of CAT-6 UTP with white colour RJ-45 transparent shuttered socket outlets (modular) with all accessories including label holder, both side colour marking as per EIA/TIA standards. conformity of standards like ISO/IEC ed. 2, EN 50173 and EIA/TIA 568 for fast connection socket and it takes fast tool-less connectors with contact marking by double colour code 568A and B and numbers connectors with insulation displacement contact (IDC). It has the possibility of min. 5 times re-wiring in the event of error, multidirectional cable entry. (Customer Approved Make : Legrand (LCS2)/Ortronics/ Luscent
.

c) **Face Plate (Plastic Modular Face Plate white in Colour 1 Module)**

Face Plate shall be white modular plate type front plate with accessories for 1/2 nos RJ 45 data outlet, but excluding RJ45 data outlet complete in all respect with grid plate, screws, MS box etc

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with connections as required. (Customer Approved Make : Legrand (LCS2)/Ortronics/ Luscent

d) **Rack End Patch Cord-1 mtr Blue in Colour**

The Patch Cord shall be of CAT6 UTP PATCH CORD - 1 MTR (3 feet) Blue Colour factory moulded as per EIA/TIA standrads.

(Customer Approved Make: Legrand LCS2)/Ortronics/ Luscent

e) **End User Site Patch Cord-2 mtr Blue in Colour**

End User Site Patch Cord shall be of CAT6 UTP LSC2 PATCH CORD - 2 MTR (7 feet) Blue Colour factory moulded as per EIA/TIA standrads.

(Customer Approved Make : Legrand (LCS2)/Ortronics/ Luscent

f) **19" rackmountable 24 Port CAT6 UTP Patch Panel Loaded**

This item shall be 24 port PATCH PANEL RJ-45 Loaded CAT-6 UTP 19" rackmountable patch panel preferbaly with front loaded 6 in a blocks as per EIA/TIA standrads, modular in mechanism. (Customer Approved Make : Legrand (LCS2)/Ortronics/ Luscent

g) **9U cabinet 504.65X600X500 (HXWXD) - Wall Mounting Rack**

9U cabinet shall be of Width (mm)-600, Depth (mm) - 500, Approx.Net Wt (kg) - 20, CRCA 'D' Grade thickness (mm) - 1.2, Powder Colour for Cabinet - RAL9002, Glass - 4mm Toughened Tinted Glass Door, Accessories:, Cooling Fan (230V A/C 90 CFM) - 2 Nos, PDU 230VAC - 1 No, Cable Manager Metal- 2 Nos, Mounting Hardware (20 sets of M6 screws,washer,cage nuts (nickel coated)) - 1 No, Wall Screws (4 sets of 2'' screws, washer, rubber grommet (nickel coated)) - 1 No, Door Lock - 1 No, Front Metal Band -1 No. In the rack there must be maintained 1U = 1.75 inches space. (All Stand alone rack and server should have 6A, 220V socket link with UPS line) (Customer Approved Make : Legrand (LCS2)/Ortronics/Rittal

h) **42U cabinet LCS2 2026X800X800 (HXWXD) - Stand alone Rack**

42U cabinet shall be of Width (mm) 800, Depth (mm) 800, Approx.Net Wt (kg) 150, CRCA 'D' Grade thickness (mm) 1.2, Powder Colour for Cabinet RAL 9002, Glass: 4mm Toughened Tinted Glass Door, Accessories: Cooling Fan (230V A/C 90 CFM) - 4 Nos, Cable Manager Metal- 4 Nos, PDU 230VAC - 1 No, Cable Channel 100mm wide 42U- 2 Nos, Heavy Duty Stationary Shelf 600W x 475D - 1 No., Mounting Hardware (20 sets of M6 screws,washer,cage nuts (nickel coated)) - 3 Nos., Earthing Strips 150mm H - 1 No, Door Lock - 1 No, Castor Wheels (with Brake) - 2 Nos, Castor Wheels (without Brake) - 2 Nos, Front Metal Band - 1 No. In the rack there must be maintained 1U = 1.75 inches space. (All Stand alone rack and server should have 6A, 220V socket link with UPS line)

(Customer Approved Make : Legrand (LCS2)/Ortronics/Rittal

i) **Splicing Tray**

It shall be Modular Splice Tray Cassette for pigtails 12 fibre capacity.

(Customer Approved Make : Legrand (LCS2)/Ortronics/ Luscent

j) **19" LCS2 Modular Liu-Fiber Optic Drawer-24 Port**

The item shall be Modular fiber optic drawer modular 19"(LIU) 24 port - FIBER OPTIC DRAWER loaded with SC Pigtail - 9/125 µm for 6 Cr. OFC armoured LCS2 and adapter for 6 OFC

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SM LCS2 without Blanking plate. The LIU should either be suitable for outdoor mounting/fixing or suitable enclosure for outdoor mounting to be provided

(Customer Approved Make : Legrand (LCS2)/Ortronics/ Luscent

k) **Note used**

l) **Screened Twisted Pair (STP) Cables**

All the STP cables shall be of Cat.6 variety conforming to ANSI/TIA/EIA 568-B.2-1, 4 pair UL/NEC rated and shall have maximum attenuation of 54.8 dB/100m at 600 MHz. Each pair shall be separately shielded with polyester Aluminium foil.

m) **HDPE pipe**

The HDPE pipe shall be used for laying OFC and STP cables in outdoor environment. HDPE pipe shall be permanently lubricated type with ISI marked. The internal diameter of the HDPE pipe shall be suitably selected so that 50% free space is maintained during cable drawing. The pipe shall conform to DOT standard GR/CDS-08/02 Nov. 2004 with latest amendments.

n) **Not used**

o) **Power Supply Unit**

i) The system will be powered from a suitable UPS system at 240VAC, 50Hz. A power supply unit shall provide the required low voltage levels to feed the equipment and their stand-by unit.

ii) The power supply unit shall have stabilised voltage outputs for input variation between -10% and +10%.

iii) The power supply unit shall be able to supply the whole equipment load and allow 50% future growth. It shall be fitted with suitable optical indication of correct working condition.

p) **Mean Time to Repair (MTTR)**

i) The design and construction of the PSS system shall ensure high reliability and availability.

ii) The PSS system shall employ modular constructional techniques in its design. Allowing a first line maintenance philosophy of module replacement to be implemented.

iii) The average module replacement time for the system is less than 1 hour as long as the correct spares holding are maintained as recommended by Bidder.

q) **Uninterruptible Power Supply (UPS) :** 1KVA UPS with 30min backup with SMF battery.

(Customer approved make: HITACHI HI-REL / SCHNEIDER ELECTRIC / EMERSON NETWORK / APLAB

The UPS should have following features:

i) Input: 140-270V AC
ii) Frequency: 47 – 53Hz
iii) Output: 1KVA
iv) Rated voltage : 230V AC 50Hz
v) Power factor: >= 0.7
vi) Overall efficiency: >= 85%
vii) Automatic Switchover time: <5msec or better
viii) Other features: overload, short circuit, over voltage and under voltage protections

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9.00.00 ERECTION & COMMISSIONING

Bidder's scope of work shall include the complete erection and commissioning of the entire system offered (except specific exclusion in services as mentioned at cl 3.05.00). However, Bidder shall include all erection materials, consumables etc for the purpose. Bidder shall also arrange all erection tools, tackle and calibration instruments.

9.01.00**INCLUSION IN ERECTION SUPPLY & WORKS**

9.01.01 Supply of erection hardware with all accessories as specified herein.

a) Erection of equipment with all erection material & accessories
b) Cabling works as specified in earlier sections.
c) Pre-commissioning activity, loop checking, calibration & testing
d) Provide supervision of all above activities.
e) Supply of consumables
f) Supply of erection / commissioning spares.
g) Providing all necessary Tools & Tackle
h) Painting with anticorrosive paint wherever required.
i) Commissioning.

9.02.00 **SCOPE OF ERECTION/COMMISSIONING SERVICE**

9.02.01 Keep calibration records.
9.02.02 Maintaining proper documentation & handing over to Purchaser.
9.02.03 Create defect records and insurance claim documentation.

9.03.00 **TECHNICAL SPECIFICATION OF ERECTION HARDWARE**

9.03.01 This section provides the general technical requirements for the erection hardware to be supplied under this package.
9.03.02 All erection materials shall be of good quality and conform to the operating environment of the plant.

9.04.00 **RIGID STEEL CONDUIT**

i) Conduits up to and including 25 mm shall be of 16 SWG and conduits above 25 mm shall be of 14 SWG. Minimum size of conduits shall be 19 mm.
ii) Each piece of conduit shall be straight, free from blister and other defects and covered with capped bushing at both ends.
iii) All rigid conduit couplings and elbows shall be hot dip galvanized rigid mild steel in accordance with IS:9537 Part-I (1980) and Part-II(1981). The conduit interior and exterior surfaces shall have a continuous zinc coating with an over coat of transparent enamel lacker or zinc chromate. Conduits shall be furnished in standard length of 3 meters, threaded at both ends.
iv) All rigid conduit fittings shall conform to requirements of IS:2667,1976. Galvanised steel fittings shall be used with steel conduit. All flexible conduit fittings shall be liquid tight, galvanized steel. The end fitting shall be compatible with the flexible conduit supplied.

9.05.00 **FLEXIBLE CONDUIT**

i) Flexible conduit shall be of three layer construction of very high quality of lead coated steel. Outside and inside layer shall be reinforced with heat resistant material.

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ii) Lead coating outside and inside of the conduit steel surface shall provide a non-corrosive characteristic particularly in acidic atmosphere. Besides flexibility, this shall be strong enough to stay at the desired profile without support and shall be durable and strong so as to offer sufficient mechanical protection. It shall also be fully liquid dust and air tight and shall withstand a continuous hydraulic pressure up to 2 Kg/Sq. cm and temperature up to 200 °C.

9.06.00 **SPECIAL FITTINGS**

All rigid conduit fittings shall conform to requirements of IS: 2667, 1976. Galvanised steel fittings shall be used with steel conduit. All flexible conduit fittings shall be liquid tight, galvanized steel. The end fitting shall be compatible with the flexible conduit supplied.

9.07.00 **GENERAL GUIDELINES & PRACTICE FOR ERECTION**

Erection procedure shall follow sound engineering practice throughout and shall not cause hindrance to the activities of other Bidders at the work site. The sequence of work activities shall follow logical sequence and shall be based on work-front availability.

9.07.01 **Panels & Cubicles**

TECHNICAL PARTICULARS

1. Material of Construction : Cold Rolled Coal Annealed (CRCA) steel sheet
2. Thickness of Sheet :
   a) 2.0 mm for faces supporting instruments / terminals
   b) 1.6 mm for other sides and top
3. Construction : Welded throughout as per approved National Standards
4. Post welding operation :
   a) Grounding of all welds to smoothness
   b) Rounding of corners
   c) Cleaning of weld spatters
5. Panel height : 2300 mm (approx)
6. Corners : 7 mm inner radius
7. Dimensional Tolerances :

a) In height & length - 3 mm
b) In height between adjacent sections - 2 mm
c) Total for a group - 6 mm

8. Doors : Double, recessed, turned back edges, full height front & rear

i) Thickness of Sheet : 2 mm
ii) Hinges : Stainless steel
iii) Door latches : Three point type
iv) Door gaskets : Neoprene rubber on fixed frame to result dust proof/weatherproof enclosure
v) Opening of the doors : Outward
vi) Louvers : With removable wire mesh to ensure dust and vermin proof

9. Gland plates : Removable in sections 4 mm thick (bottom)
10. Cable entry : Bottom
11. Hardware :

a) Anti vibration pad- 15 mm
b) Predrilled base channel ISMC – 100 or equivalent for all sides
c) Stainless steel buff- finished 2 mm thick kick plate for all sides
d) Stainless steel scratch strips along desk edges fixed with pan-head recessed screws
e) Rubber strips to ensure air tightness between kick plate and finished floor
f) Lifting hook / Eye bolt
g) Drawing pocket

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h) Door switch, lamps, thermostat, heaters and industrial grade cooling fans, illumination fixures

12. Name Plate : Both at front and back surface of the panel
13. Fixing of name plate : Stainless steel pan head screws
14. Name plate material : Laminated phenolic (3 layers)
15. Lettering : Black with white engraved
16. Mounting of terminal blocks: Vertical angle support bracket tack welded on sheet steel plate, screwed on internal wall of enclosure

10.00.00 DOCUMENTATION

10.00.01 Details of documentation to be supplied as part of the System shall be submitted to Owner for approval prior to execution of the contract.

10.00.02 Each documentation deliverable shall be an integral part of Bidder's Project schedule and shall be identified by date for delivery.

10.00.03 N/A

10.00.04 The following data shall be shown on all documents and/or drawings:

Name of Bidder / Bidder
Correct and complete designation of the document
Exact indication of the scale employed
Revision Index and type of revision
Name of the site.

10.00.05 Bidder shall supply final approved sets of documentation in hard copy and soft copies on DVD.

10.00.06 Bidder shall provide the signature and seal on the each and every pages of this specification along with their offer for the confirmation to all the clauses. Along with submit deviation/clarification list if any in given format.

10.00.07 Final Documentation shall be assembled as per Owner's instructions for collation of Dossiers.

10.00.08 Following sections detail the minimum set of documentation that shall be supplied with the System.

10.01.00**ENGINEERING DESIGN DOCUMENTATION**

10.01.01 Bidder will produce drawings of complete system to be submitted to Owner for approval, indicating upon each the following:

a) Overall dimensional drawing of system cabinet, console and its accessories.
Block diagram of system offered with a brief write-up on operation including hook-up arrangement with existing system.
b) Data sheets.
c) Bill of Materials.
d) Typical general arrangement drawings of various handset and speaker stations.
e) Schematic diagram of each type of station.
f) Mounting details.
g) Cable connection diagram for various type of stations, clearly indicating cable size, number of pairs/cores etc.
h) Total power consumption details.
i) Heat load details of panel equipment.
j) Technical leaflets on each piece of equipment viz handset, speaker etc.

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10.01.02 The Systems Design Manual shall contain all relevant information pertaining to the design and operation of the delivered equipment.

10.01.03 This is intended to provide Owner with an understanding of the operational and design parameters of the equipment and to resolve System operational problems.

10.01.04 This documentation shall typically include the following items, presented in a Systems Design Manual:

Equipment design calculations and selection basis.
Equipment construction and assembly drawings.
Parts list and drawings with manufacturer's identification codes.
Systems connection diagrams.
Accessories list and drawings with manufacturer's identification codes.

10.02.00 **OPERATION & MAINTENANCE DRAWINGS AND DOCUMENTATION**

10.02.01 The O&M Drawings and Documentation shall typically include the following items:

Assembly drawings.
Parts list and drawings with manufacturer's identification codes.
Accessories list and drawings with manufacturer's identification codes.
O&M schedules.
Maintenance guidelines including lapping instructions.
Troubleshooting guides.

10.02.02 The O&M manuals shall be submitted in the form of handy, hard bound books which can be easily handled and transported to site.

10.03.00**DRAWING/ DOCUMENT SUBMISSION REQUIREMENTS**

10.03.01 Bid shall contain at least the following documents:

SL. NO.	DOCUMENT TYPE
1.	Data sheets / catalog of each item of BOM
2.	Proposed System schematic diagram.
3	Write up on architecture and operation of proposed system
4.	BILL OF MATERIALS with make and model no. of equipment
5.	Power requirement (capacity of FCBC and SMF battery)
6.	Clause wise technical compliance indicating each parameter value of w.r.t specification. A printout of this specification may be taken and "COMPLIED" to be mentioned against each clause with signature and seal on each page. Any deviation should be marked up at relevant clause.
7.	System Integrators participating on behalf of camera OEM should submit an authorization letter from OEM stating: a. The bidder is their authorized and trained system integrator b. They shall extend all technical support for designing and commissioning of the system c. Their product quoted by bidder is not presently in end of life list and its spare part as well as spare shall be available for a period of 5years from date of

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	supply of such items d. The product shall be brand new (not refurbished) at time of supply e. They shall continue extending technical and spares part support to BHEL through their other authorized partners in case, their tie up with bidder ceases after supply and till complete commissioning / handing over of the system.

10.03.02 Following documents shall be submitted after award of contract

SL. NO.	DOCUMENT TYPE
1.	Supply Document List
2.	Supply Program
3.	Data Sheets
4.	System Architecture Drawing
5.	Constructive equipment drawings (CCTV Controller, Camera cum database server and accessories dimensional dwgs)
6.	Technical specification /datasheet/ catalog
	Details of Panel and Installation
	Erection /Installation Drawing
	Equipment Layout Drawing in buildings / locations
	Wiring Diagram of Panel
	Cable Route Layout Drawing
	Power Distribution Scheme Diagram
	Cable schedule
7.	Test certificates
8.	Compliance certificates
9.	Quality Control Plan
10.	Test procedures
11.	Packing List
12.	Start-up , Recommended and mandatory spare parts List
13.	Tools and tackle & consumable list
14.	Operation and maintenance manuals
15.	Final version of all drawings and documents furnished with Bid.

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10.04.00**AS-BUILT DRAWINGS**

Upon completion of the final acceptance of the System by Owner, all construction drawings shall be updated by Bidder to an as-built status to reflect the equipment and System configurations as actually installed.

11.00.00 TESTING

11.01.00**FACTORY ACCEPTANCE TEST (FAT)**

11.01.01 Factory Acceptance Test procedure shall be prepared by Bidder along with Quality Assurance Plan. The document shall be subject to Owner's approval.

11.01.02 All System equipment shall be tested in the factory prior to clearance for shipping. The FAT shall include individual equipment tests and integrated under fully assembled condition.

11.01.03 The FAT shall demonstrate adherence that the equipment meets the design standards and functional compliance.

11.01.04 One (1) month prior to the FAT, Bidder shall submit a test procedure to Owner for approval. Duration of FAT at manufacturer's works shall be atleast two weeks.

11.01.05 Owner's representative may, at Owner's sole discretion, attend the FAT. In this event, Bidder shall ensure all tests are carried out in the presence of Owner's personnel. If Owner declines to attend the FAT, Bidder shall carry out these tests and submit the results to Owner for review.

11.01.06 Factory Acceptance Tests (FATs) shall be documented with the results obtained and the success or failure of the test. The test results shall be submitted to Owner prior to clearance of the FAT and authority by Owner is given to ship.

11.02.00**COMMISSIONING**

11.02.01 Bidder is responsible for delivering a fully functional equipment that meets all the requirements of the Specification and applicable standards.

11.02.02 The Commissioning processes will demonstrate the above to Owner, before handing over of the System.

11.02.03 System Commissioning shall comprise of a number of different activities culminating in the acceptance of the operational System by Owner. These activities are detailed in the following sections.

11.02.04 Bidder shall provide all necessary test equipment required to carry out the Commissioning and acceptance testing.

11.03.00 **SITE ACCEPTANCE TEST (SAT)**

11.03.01 Site acceptance test shall be performed by Bidder to verify the full operational functionality of the System.

11.03.02 Four weeks prior to the SAT Bidder shall submit a test procedure to Owner for approval.

11.03.03 All SAT tests shall be documented with the results obtained and their success or failure. These test results shall be submitted to Owner prior to clearance of the SAT and proceeding to the final performance tests.

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12.00.00 MAINTENANCE REQUIREMENTS

12.01.00 **MAINTENANCE PHILOSOPHY**

12.01.01 Owner's maintenance philosophy is to undertake first line field repair by modular replacement. The module shall then be returned to the supplier, who shall either repair it or replace it during the warranty period.

13.00.00 TOOLS & TACKLE

13.03.01 Bidder, in his proposal, shall include and provide a list of all tools and tackle which may be required for erection, maintenance, overhaul and replacement of equipment / component to be supplied under this specification. Unit rate of the same shall be provided.

14.00.00 CLEANING, PROTECTION AND PAINTING

14.00.01 All equipment shall be shipped in properly cleaned condition. All the equipment shall be thoroughly cleaned to remove mill scales, rust etc. and properly painted with anti rust primer, where applicable

14.00.02 Some of the equipment and accessories, after arrival at site, are likely to be in storage for long periods before they are taken up for erection. Bidder may provide adequate protection for preventing damage due to corrosion, dust / dirt ingress, ageing etc.

14.00.03 Plugs shall be provided at cable entry holes/adapters to avoid entry of dust and foreign particles. Paper cap will not be acceptable.

15.00.00 IDENTIFICATION, MARKING, PACKING AND STORING

15.00.01 Each equipment shall be individually packed, tagged and protected.

15.00.02 Inscription on equipment (labels) shall be in English.

15.00.03 Packing must be such to protect all goods from possible impacts and foreign matters; moreover, it must limit the influence of both the climate and the environment, and be suitable for the kind of shipping provided for.

15.00.04 In packing the equipment and accessories, all necessary precautions will have to be taken to avoid any damage during transport and delivery.

15.00.05 All items supplied shall be packed for long term storage under the climatic conditions prevailing at the site. Small items shall be packed in sealed transparent plastic bags with desiccator packs as necessary. Each item shall be clearly marked with its description, purpose and plant designation code as applicable. When more than one item is packed in a single case a general description of the contents is to be shown on the outside of each case and a detailed list enclosed. All cases and other packages must be suitably marked and numbered for identification purposes.

16.00.00 SHIPMENT

16.00.01 Bidder shall be responsible for ensuring that all equipment are carefully and/or suitably packed for shipment, so that they arrive at site in good condition and remain so during storage at site. Before dispatch, all exposed surface shall be protected by applying anti rust primer (two coats) and suitable cover shall be provided for the equipment to be supplied.

16.00.02 Bidder will be responsible for all damages due to improper preparation of the goods for shipment

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17.00.00 QUALITY ASSURANCE PLAN

17.00.01 Equipment supplied under this specification shall have assured quality and workmanship.

17.00.02 Bidder shall complete the Quality Control Plan with the information pertaining to him, in particular with the reference of the documents to be used.

17.00.03 The QCP completed by Bidder shall be submitted to Owner for approval.

17.00.04 Bidder shall carry out all the checks, tests and inspections required to verify the compliance of the supply with the specification requirements at his own expenses. Applicable test will be as per the Inspection and Test.

17.00.05 If not specified otherwise in Contract, Bidder shall notify Owner, 10 (ten) complete working days in advance, that the equipment is ready for inspection. In case the inspection is performed without due notification, repetition of those tests may be requested at Bidder's expenses.

17.00.06 Owner and/or testing body's inspector shall have free access to Bidder's works both during manufacturing and tests & trials.

17.00.07 Bidder shall stand guarantee for perfect operation of the equipment during the period specified in the warranty.

17.00.08 Regardless of the results of the tests performed in Bidder's works, the final test will be performed at the plant, under actual operating conditions.

17.00.09 Bidder shall therefore undertake to replace, free of charge and within shortest time possible, all material which, in operating conditions, shall fail to comply with contractual requirements.

17.00.10 Bidder shall arrange the inspection and tests in easily accessible location and in properly illuminated shop to carry out the inspection in proper way.

17.00.11 Bidder shall, if called for, produce the necessary technical documents (drawings, specifications etc) and copies of the codes or procedures applied to the execution of inspections and/or tests.

17.00.12 Owner reserves the right to reject the inspections and tests which fail to fulfil the above conditions.

17.00.13 Bidder shall perform inspections and tests in full compliance with industrial safety rules, to safeguard his own personnel as well as Owner's/ Consultant's Inspectors.

17.00.14 Bidder shall be responsible for the performance of the tests and shall:

a) provide qualified and specially skilled personnel

b) provide calibrated instruments with relevant certification

17.00.15 For Type or Special tests, Bidder shall indicate the location for carrying out the tests (Bidder's works or any recognized laboratory).
In case Owner is expected to give approval on the basis of certifications concerning similar previous supplies, Bidder shall submit for approval to Owner the documentation demonstrating the compliance between the supply and the certified model.

17.00.16 If during the execution or at the end of the supply, any non-conformances are noted, Bidder shall implement and adequately document all the corrective actions necessary to restore the contractually required conditions. The documentation related to the corrective actions shall be included in the final certification report. If the non-conformance compromises the functional or safety feature of the equipment or specific interface elements, the supplier shall inform Owner in advance in writing on the corrective actions he intend to implement. Owner has the right to reject (totally or partially) the proposed actions if considered

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inadequate or insufficient and Bidder may be asked for more adequate actions. The failure to communicate such non-conformances will be considered fraudulent intention.

17.00.17 During manufacture Bidder shall make available, the certificates concerning the inspections and tests performed. At the end, Bidder shall provide the certificates required for components for which a QCP has been developed. These certificates shall be kept in dossiers and shall comprise the documents concerning manufacturing, inspections and tests performed on the component and on its parts.

17.00.18 The supply shall be considered completed if:

- the documents presented to Owner have been approved;
- the materials are in compliance with the specification; and related certificates are available and acceptable;
- the necessary qualification certificates are available and acceptable; the components have been inspected, examined and tested as required and related certificates are available and acceptable;
- the non-conformances have been documented and accepted by Owner;
- the components are clean, protected and identified;
- the necessary instructions for protection, handling or storage are available; the Final Inspection Report has been submitted.

17.00.21 General requirements for inspection shall be as per the following guidelines.

a) **Non Destructive Tests** **(NOT APPLICABLE)**

b) **Tests** The materials, manufacturing and finished components shall be inspected, controlled and tested as defined in this paragraph in compliance with standard codes and technical specification that shall be subject Owner's approval.

c) Visual Inspections

18.00.00 **DISCREPANCIES**

18.00.01 In case of discrepancies between the technical requirements and other applicable Engineering Standards, Materials System Specifications, Standard Drawings, or industry standards, codes, and forms shall be resolved in writing by Bidder with Purchase. Before starting the manufacturing / supply, Bidder shall inform Purchase of any discrepancy between the instructions of the present specification and Bidder's standard. Bidder is also advised to discuss on any clarification required before submitting their offer to avoid any ambiguity/dispute later on.

18.00.02 It shall be the responsibility of Bidder to determine and comply with the statutory regulation (i.e. city, state, national, provincial, etc. codes or ordinances) which will apply in the location where the item is to be installed. Mandatory regulations shall supersede over this this specification.

18.00.03 In case of any discrepancy in specification / parameter mentioned in this purchase specification, the stringent between the two shall be considered and offered.

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19.00.00 Bill of Material

SL. NO.	BILL OF MATERIAL	TOTAL QUANTITY
	PERIMETER INTRUDER DETECTION & CCTV SYSTEM	
1.a	Redundant Camera cum database server with mouse, keyboard with all accessories for Unit zone 270 camera + 20% spare hardware capacity	1 Set
1.b	Redundant Camera cum database server with mouse, keyboard with all accessories for CHP zone 120 camera + 20% spare hardware capacity	1 Set
1.c	Redundant Camera cum database server with mouse, keyboard with all accessories for Common Plant Area zone 148 camera + 20% spare hardware capacity	1 Set
1.d	Redundant Camera cum database server with mouse, keyboard with all accessories for perimeter zone 90 camera + 20% spare hardware capacity	1 Set
2.a	Digital Video Management Software and Video Analytic software for unit zone 270 camera + 50% spare license	1 lot
2.b	Digital Video Management Software and Video Analytic software for CHP zone 120 camera + 50% spare license	1 lot
2.c	Digital Video Management Software and Video Analytic software for Common Plant Area zone 148 camera + 50% spare license	1 lot
2.d	Digital Video Management Software and Video Analytic software for perimeter zone 90 camera + 50% spare license	1 lot
3.	65” LVS with mouse, keyboard, joysticks and accessories	2 sets
4.	Operator work station with 32’’ TFT Monitor with mouse, Keyboard, joystick and accessories at various Control Rooms, TSGENCO official room etc for monitoring plant cameras.	08 Nos.
5.	Operator work station with 24’’ TFT Monitor with mouse, Keyboard, joystick and accessories at Security complex, admin building, main gate etc for monitoring Perimeter cameras	4 Nos.
6.	Operator work station with 32’’ TFT Monitor with mouse, Keyboard, joystick and accessories at DE-Electrical office and Switchyard control room for monitoring transformer and switchyard thermal cameras. The video of thermal cameras shall be stored in one of these OWS and facility should be there to transfer these video in any NAS. The OWS shall be installed with required VMS with 50% spare license.	2 Nos.
7.a	Network Access Storage (NAS) System with RAID-5 storage capacity for unit zone 270 cameras with 20% spare hardware apacity	1 set
7.b	Network Access Storage (NAS) System with RAID-5 storage capacity for CHP zone 120 cameras with 20% spare hardware capacity	1 set
7.c	Network Access Storage (NAS) System with RAID-5 storage capacity at Common Plant Area 148 cameras with 20% spare hardware capacity	1 set

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7.d	Network Access Storage (NAS) System with RAID-5 storage capacity for perimeter 90 cameras with 20% spare hardware capacity	1 set
8.	Fixed IP camera with motorised zoom in a weatherproof housing, mount, power supply and accessories for perimeter surveillance	90 Nos. *
9.	IP PTZ camera with weatherproof housing, mount, power supply and accessories	538 Nos.
10.	IP Fixed thermal cameras	22 Nos.
11.	Industrial grade L3 Core Switch set complete with all accessories	1 Set
12.a	Industrial grade L2 Distribution switch with min 24nos Cu and 4nos SFP ports for unit zone for 270 camera + 20% spare capacity (each port of 1 gigabit capacity)	1 set
12.b	Industrial grade L2 Distribution switch with min 24nos Cu and 4nos SFP ports for CHP zone for 120 camera + 20% spare capacity (each port of 1 gigabit capacity)	1 set
12.c	Industrial grade L2 Distribution switch with min 24nos Cu and 4nos SFP ports for CPA zone for CR 148 camera + 20% spare capacity (each port of 1 gigabit capacity)	1 set
12.d	Industrial grade L2 Distribution switch with min 24nos Cu and 4nos SFP ports for perimeter zone for 90 camera + 20% spare capacity (each port of 1 gigabit capacity)	1 set
12.e	Industrial grade L2 Distribution switch min 24nos Cu and 4nos SFP ports for 22nos thermal camera + 20% spare capacity (to be mounted in 12U rack)	1 set
13.	Industrial grade L2 Field network switches having minimum 8no Cu & 4no SFP port, each of 1 gigabit capcity, with 20% spare ports, for perimeter cameras	47 Nos. *
14.	Industrial grade L2 Field network switches having minimum 8no Cu & 4no SFP port, each of 1 gigabit capcity, with 20% spare ports, for plant area cameras	200 Nos.
15.	Industrial grade L2 Field network switches having minimum 8no Cu & 4no SFP ports each of 1 gigabit capcity, with 20% spare ports, for thermal cameras	7 nos
16.	10/100Mbps industrial grade media converter with suitable nos of chassis to be mounted in cabinet / racks	25 pairs
17.	10/100/1000Mbps industrial grade media converter with suitable nos of chassis to be mounted in cabinets /racks	8 pairs
18.	UPS of min 1 KVA or adequate rating and 60min back up time for 3-4 camera and 1 field switch	10 Nos.
19.	42U panel for housing the server, network switch etc in control room	4 sets
20	4 core Single mode armoured OFC cable	80,000 mtrs
21.	Twisted 4 pair STP CAT6 cable and connectors for connectivity to cameras	20,000 mtrs
22.	Passive Fiber Optic Components and termination kit consisting of LIU, SC couplers, Pigtail, UTP CAT6 Patch cords, various connectors, cable ties etc Fringe electrical items for JBs, Panels, power supply etc for complete system Fringe mechanical items like IP 65 JBs, camera mount structures, racks etc for system	1 lot
23.	Flexible GI Conduit (lead coated) for cable between camera JB to camera	2000mtrs

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24	25mm PVC Conduit with coupler and other accessories for routing STP Cat6 cable	5000 mtrs
25.	32mm x 26mm permanently lubricated HDPE PIPE with coupler and other accessories for routing power and OFC cable along perimeter wall and underground FO cabling as required in plant areas	25000 mtrs
26.	Earthing system for Servers and also for cameras	1 Lot
27.	Suitable metal clamps for fixing cable / conduits over cable tray / wall	1 Lot
28.	Power distribution boards for distributing power supplied to camera & switch from UPS/CCTV Panel/PDB	As required
29.	GI Poles of minimum 15feet suitable for mounting Camera and related JB etc	60nos *
30.	Weather proof Storage container (with lock and key arrangement) of adequate dimension for long term storage of electronic items supplied for PSS system.	As required
31.	NMS System for IP backbone network	1 Set.
32.	Anti Virus software / firewall for server & OWS	1 Set.
33.	a. Any other item mentioned in technical specification & not covered above. b. Any other item required for completion of system as per technical specification	1 Set.
34.	Training to TSGENCO site officials for operation and maintenance of the system	1 Set.
35	Engineering, design, documentation, testing, installation & commissioning	1 Set.
	PATROL GUARD SYSTEM	
1.	Patrol Guard PC, mouse, keyboard with all accessories at Central Control Room.	1 Set.
2.	Patrol Guard Card Reader	50 Nos.
3.	Patrol Guard Data Collection and transfer unit	10 Nos.
4.	Data Transfer cable with connector	2 Nos.
5.	Patrol Guard Software	1 Set.
6.	Engineering, design, documentation, testing, installation & commissioning	1 set
	MANDATORY SPARES OF CCTV SYSTEM	
1.	Fixed motorised zoom camera with power supply and enclosure (20% of main qty)	18 nos *
2.	PTZ camera with power supply and enclosure (20% of main qty)	108 nos
3.	Fixed thermal cameras with power supply (20% of main qty)	5 nos
4.	L3 Core Switch (each type)	4 nos
5.	L2 Distribution switch (each type)	4 nos
6.	L2 Field network switches (each type 10%)	26 nos *
7.	Patrol Guard Card Reader	5 nos
8.	10/100Mbps industrial grade media converter	5 pairs

9.	10/100/1000Mbps industrial grade media converter with suitable nos of chassis to be mounted in cabinets	2 pairs
10.	Panel wiring cables & Special cables (if any)	25% of qty used
11.	Terminal Blocks	25% of qty used
12.	Fuses	120% of qty used

***Note:** The plant boundary of the project is approx. 22km. The specification of fixed camera mentioned is minimum specification required for the project. However, these cameras need to cover the entire perimeter and the viewing range of the offered camera shall be adequate to identify face of intruders. Bidder may accordingly offer 90nos of suitable model of camera which can be placed to cover entire perimeter or offer higher quantity of camera through which entire perimeter is simultaneously covered. 1no of field switch and 1no of pole for every 2nos of additional fixed camera offer by bidder (over and above 90nos mentioned in BOM) are also to be offered.

In case bidder is offering higher quantity of camera, 1no of field switch and 1no of pole for every 2nos of additional fixed camera offered (over and above 90nos mentioned in BOM) are also to be offered. Further, required JBs, FO accessories etc for these additional cameras are also to be offered. Quantity of mandatory spares of fixed camera & edge switch should also be suitably offered.

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